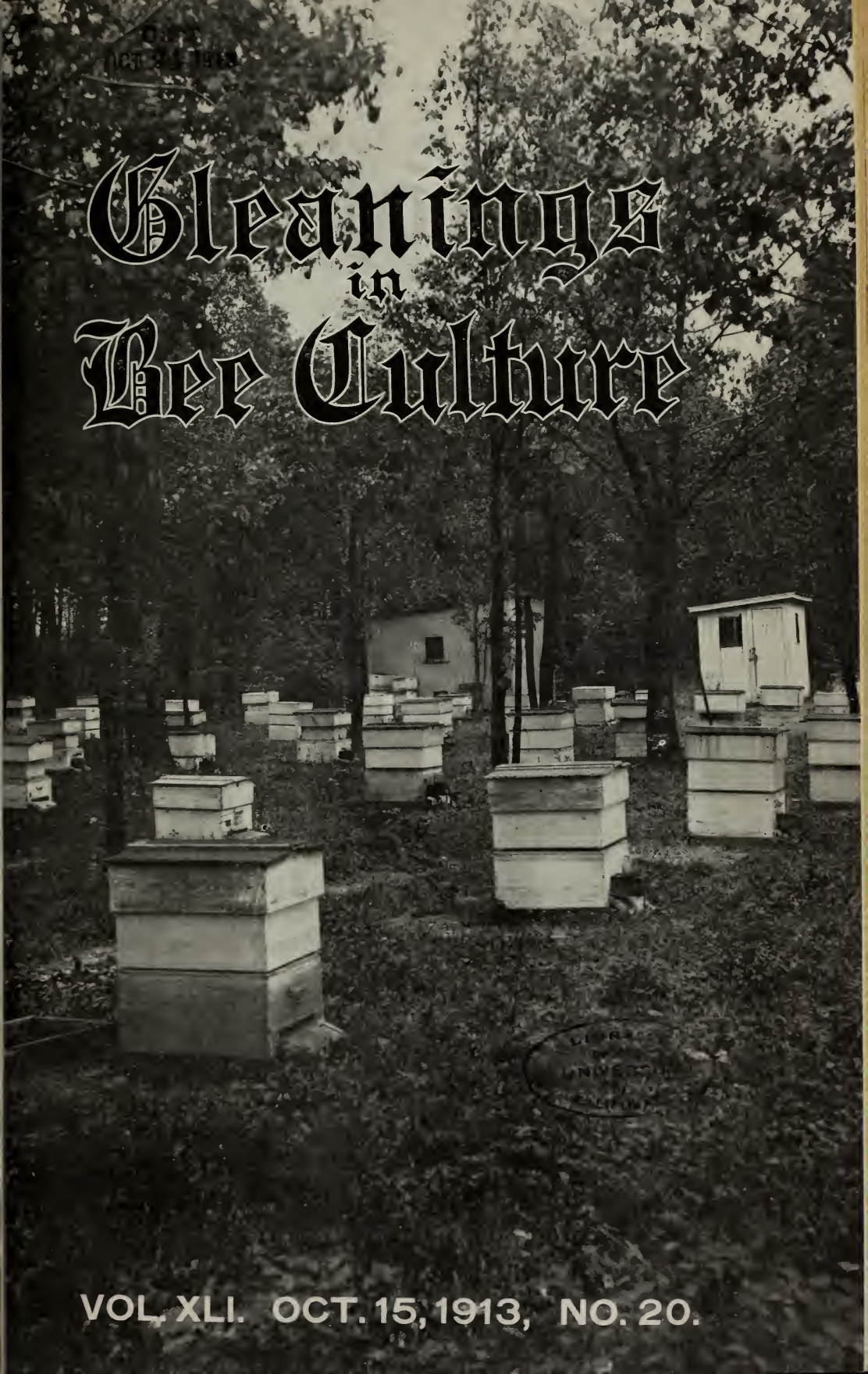
# Gleanings in Bee Culture



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# Gleanings in Bee Culture

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VOL. XVI. OCTOBER 15, 1913 NO. 20

## Editorial

### THE EDITOR OF THE AMERICAN BEE JOURNAL ABROAD.

THE editor of the *American Bee Journal*, who has been traveling in Europe, writes entertainingly in his paper about his trip. Mr. Dadant has not only been going through his fatherland, France, but through Italy and Switzerland.

### DEATH OF MR. JACOB HUFFMAN.

MR. JACOB HUFFMAN, of Monroe, Wis., died recently of a paralytic stroke. He was for a number of years president of the Wisconsin State Beekeepers' Association, and at one time was vice-president of the National Beekeepers' Association. He seldom wrote for the bee journals, but was prominent at conventions. He was one of the most extensive as well as one of the best beekeepers of his State. He will be missed by his fellow craftsmen.

### NOTICES OF NEW BULLETINS ON BEES.

IT is always our intention to make editorial mention of any new book or bulletin on bees. If we inadvertently omit such mention, the author or parties concerned will confer a favor by calling our attention to it, at the same time seeing to it that another bulletin is sent. It is not always possible for us to keep track of works published in foreign countries, and especially those printed in other languages. The conditions of management and climate necessarily render a work in another country of little value elsewhere. The A B C and X Y Z of Bee Culture, however, aims to be cosmopolitan as far as the United States and Canada are concerned. In this country we have nearly all conditions of climate that are found in other parts of the world; and our work is, therefore, adapted to all climates where bees are kept.

### WHY, TO BE SURE.

THE new State Chemist in Idaho is a man who takes a pretty practical view of things if we may judge by his statement in regard to the belief that so much honey is adulterated. We quote herewith the paragraph in question from the *Evening Capital News*, of Boise, Idaho:

> "I wonder why it is that people believe honey has been adulterated, even though they have seen the farmer gather it when they buy," asks the State Chemist. "They don't act the same way when they buy other things on the market. If they should get a can of maple syrup that was largely adulterated, the first question they would ask is, 'Well, it won't hurt me will it?'"

Too many people are all too willing to believe that foods of all kinds are adulterated. They like to say that maple syrup is made out of glucose and corncobs, etc. Personally we like to think that what we are eating is clean, and that it came from clean surroundings. That is why we like to eat honey.

### NEW YORK STATE BULLETIN NO. 49, ON THE SUBJECT OF THE HONEYBEE, BY W. D. WRIGHT, FREE TO ALL.

IN our issue for September 15 we gave an extended review of a bulletin issued by the Department of Agriculture at Albany, N. Y. It will be remembered that we spoke of it as one of the best specimens of the printer's art that has ever been published, and that it was written by one of the best beekeepers in the Empire State. We suggested that all outside of New York might have to pay 10 or 25 cents for it. Commissioner Huson says they are free to all. Here is what he says:

> *Mr. Root*:—We wish to thank you for the very pleasant notice that you gave in GLEANINGS for September 15 relative to our recent bulletin No. 49 on the subject of the honeybee. We notice that you suggested that these bulletins could be sent outside of the State of New York on payment of a fee of ten or twenty-five cents. It is my desire to supply these bulletins free of cost to any persons who are interested in the subject as long as we have an available supply for the purpose.
>
> CALVIN J. HUSON, Commissioner.
> Albany, N. Y., Oct. 1.

It is a splendid book, and is well worth reading, and keeping in any library, especially when it costs no more than a postal card to get it. Now is your chance, brother beekeepers; but do it "fust," as David Harum says, as the edition may be exhausted.

### A REVISION OF "WINTERING BEES."

WE have just received from the GLEANINGS press a newly revised edition of a book entitled "Wintering Bees," by E. R. Root. It contains 62 pages, paper covered. It is fully illustrated, and well printed. This new revised edition contains particulars regarding the latest methods of wintering, such as the subject of candy for feeding bees. It also places strong emphasis on the importance of windbreaks for outside colonies. In a general way it covers the whole subject of indoor and outdoor wintering; ventilation and temperature of bee-cellars; general construction of bee-cellars; then winds up with a few concluding facts well to bear in mind. These facts or statements were indorsed by no less authorities than Dr. C. C. Miller and the late W. Z. Hutchinson. Price 10 cents, postpaid.

### CORRECTION REGARDING MILLER METHOD OF INTRODUCING.

THE following telegram from Mr. Arthur C. Miller, just as we go to press, will explain:

*E. R. Root*:—You have misquoted me, and thereby done me injustice—editorial, page 667. I do not confine queens twelve hours. Alley did not introduce to full colonies with tobacco smoke—Handy book, pages 25 and 26, edition 1883.

ARTHUR C. MILLER.

Providence, R. I., Oct. 10.

We do not know how this error crept in; but the method that we find so efficacious is precisely the one that Mr. Miller recommends in his article on page 370 in our issue for June 1. Furthermore, it is true that Mr. Alley did not introduce to full colonies. The only point of similarity between the Alley method and the Miller is that Alley used tobacco smoke and introduced only to nuclei. He evidently did not contemplate the plan of introducing to full colonies, under all conditions, laying and virgin queens, the latter of any age. We may say further that we are still using the plan; and if it continues to work as satisfactorily as it has done, we shall recommend it to all of our customers in preference to the caging method.

### ARE SPECIAL NUMBERS ON ONE TOPIC CONFUSING?

OUR first idea in providing special numbers such as we have had during the last few years was to draw out the best available thought on the special subject in question, so that in a "multitude of counselors" there might be wisdom. In one or two of these numbers, experts have disagreed somewhat, so that we were fearful the effect might be somewhat confusing. This fear is expressed by one of our subscribers, Rev. G. H. Chatterton, who writes as follows: "For my part I do not care so much to have one whole number on one subject. It seems to confuse one when there are so many different views expressed."

We are willing to abide by the wishes of our readers in this respect. We shall soon have to be making plans for the special numbers next year if we have them, and at this time, therefore, we should be very glad if those of our readers who are interested in the matter would express their opinion briefly on a postcard, and mail it to us. We should prefer to have nothing else on the card, and to have the opinion on a postcard only. We shall govern our actions according to the opinions expressed by the majority of those who vote.

### GETTING COMBS FASTENED IN SECTIONS AFTER THEY HAVE BEEN FILLED WITH HONEY AND CAPPED OVER.

DR. A. F. BONNEY, after seeing the article by Dr. Humpert in our last issue, page 674, on cutting up filled extracting-combs and fitting them into sections for the bees to fasten, wrote us that he had been experimenting along the same general lines without the knowledge of what our correspondent had been doing, and that, before he had seen the Humpert article, he had sent a communication to the *American Bee Journal* that is yet to be published. He hoped, therefore, no one would think he had been copying.

In the mean time, A. I. Root says that away back in the early '70's the first section honey he ever put up was made in this way—that is to say, he cut up the best combs from his extracting-frames, and fitted them into squares of wood for the bees to fasten afterward. These he called "sections" or "sectional honey-boxes." If we are correct, he originated these names. Well, he made the discovery that the bees would not make the attachments satisfactorily in most cases—that it was very much better to put the sections in the hive, let the bees build, fill, and cap the combs in the first place, than it was to work on the other plan.

In relation to this matter, we have received a letter from Mr. M. H. Hunt, one of the veteran beekeepers of Michigan, and who did a good deal of pioneer work among his bees when A. I. Root was doing his early experimenting. Mr. Hunt writes:

*Dear Mr. Root*:—I have just finished reading Dr. G. A. Humpert's article in Oct. 1st GLEANINGS. Years ago, when I used to go to fairs, I cut honey to fit solidly into glass and wooden sections, and had the bees fasten the same. This summer I had only two days' notice of a banquet, and I cut and

fitted into sections 2½ x 2 enough for each one in attendance. I have always found that a large percentage of the sections so fixed will fail to be anywhere near perfect. The larger the section the greater the success.

Redford, Mich., Oct. 8. M. H. HUNT.

As stated in our issue for Oct. 1, the plan of cutting up combs into small squares out of extracting-frames is feasible; but such combs should be allowed to drain, then wrapped in paraffine paper, and put into cartons. A. I. Root is very positive that it is not practicable to have these cut combs, after they have been capped over, fitted into and fastened into sections by the bees as an after-operation. While they *may* make a few individual specimens that will look very well, in a large way he says the plan is not a success.

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OUR COVER DESIGN; CELL-BUILDING COLONIES.

OUR front cover design for Sept. 15th issue shows a view of our queen-mating baby nuclei among the basswoods where we raised and mated over 3000 queens during the past season. On the cover of this issue we show the cell-building colonies for these same babies a little further along in the same grove. Not all the hives are cell-builders, but all the two-story are devoted (or were at the time the picture was taken) to that purpose, and all of them were operated for honey. Last year was an exceptional one for nectar secretion. It was not necessary, therefore, to feed these cell-builders—in fact, our Mr. Pritchard was greatly embarrassed by such a flood of honey coming in that his queens were honey-bound, and his cell-builders swarmed and swarmed and swarmed, keeping him busy a great deal of the time in shinning up trees, for these powerful colonies devoted to building cells would of course be in fine condition to swarm. The usual procedure of cutting out cells would not do, for that would defeat the very purpose of these colonies, so Mr. Pritchard had to grin and bear it. Once or twice he was compelled to witness one or two of his crack colonies sail over the tops of the basswoods and fly on and on and on, crosslots, for parts unknown.

This is a very good location among the basswoods; and, as will be seen, it is well sheltered in all directions from the prevailing winds. The only exposure is toward the south, and we seldom fear a south wind, even in mid-winter. Next to this basswood grove on the north is a dense growth of woods. On the west is an extension of the grove for about one thousand feet further on. During the windiest of days there will be no piercing blast to interfere with wintering or springing.

On the other side of the building is a driven well which is out of view. It supplies us with plenty of clean water for washing, and for making up syrup whenever there is no honey coming in; for it should be understood that cell-builders should be kept in a highly prosperous condition by slow feeding if there is no honey coming in from the fields. We use a Boardman entrance feeder with glass Mason jars, some of which will be seen in the foreground. The syrup is received through three or four holes in the cap, and the supply is so restricted that a filled can of syrup will last even a cell-builder 48 or more hours. As long as there is a constant supply of food coming in, the work on the cells will continue uninterruptedly. But if one of these feeders, by chance or otherwise, should be allowed to remain empty for a few hours during a dearth of honey, there will be danger that every cell will be destroyed.

For further particulars regarding this basswood yard and its early history, see page 631, Sept. 15th issue.

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NATURAL VS. ARTIFICIAL RIPENING OF HONEY.

WHILE we doubt whether it will pay to utilize any more space in GLEANINGS for a discussion of artificial ripening of honey, since the great bulk of the evidence is against the practice, we should like to mention, nevertheless, that in the May 15th issue of the *Australian Beekeeper* a discussion on the subject appears, which is really a symposium. As usual there is a difference in opinion, although there is not such a feeling against the practice in Australia, apparently, as in this country for instance. We desire to point out in passing that at least one of the writers is laboring under a misapprehension when he believes that the bees do nothing to the nectar of the flowers except to evaporate the excess of moisture —in other words, that the ripening process is merely driving off the excess of water. All chemists know that there is a decided chemical difference between the sugar found in the nectar of the flowers and that in ripened honey. By the time the evaporation is accomplished by the bees, the "inversion," as it is technically called, has been brought about.

While not recommending the practice we believe that there are localities where it is safe for a judicious beekeeper to extract from combs not yet capped over. We believe, also, that in many other localities there are certain combinations of conditions of weather, atmosphere, etc., where the honey is entirely ripe before it is capped over. As an illustration, because of the necessity of providing room for colonies in one of our

yards during the height of a period of excessive swarming, we extracted something over a thousand pounds from combs, many of which were not yet even partly sealed. To our surprise the honey was as thick as any we ever extracted, and the flavor was also equal to the very best. Under other conditions (this was toward the close of quite a protracted drouth) we are sure that the honey would have been thin and entirely unfit for table use.

We wish to go on record, as we have said before, that we do not believe in extracting *green* honey, and then making an effort to ripen it artificially. With a suitable equipment we believe an expert may succeed; but we can not recommend the practice for the average beekeeper under the average conditions.

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### WHY THERE WAS NO APPROPRIATION FOR THE TEXAS FOUL-BROOD LAW.

In our issue for Oct. 1 we referred to the fact that the splendid foul-brood law that was enacted by the last legislature of Texas did not carry with it an appropriation to put it into effect. In writing to State Entomologist Wilmon Newell concerning it we stated that the situation was somewhat the same in his State as it was formerly in Pennsylvania; and we suggested that perhaps under the circumstances Mr. Newell could adopt the same scheme that was employed two years ago in Pennsylvania—namely, secure volunteer service from beekeepers interested in the suppression of foul brood in their respective localities. Much good was done in Pennsylvania because Prof. H. A. Surface, State Entomologist, clothed these volunteer inspectors with police authority. The result was, a large amount of good was done. In referring to this, Mr. Newell writes, under date of Sept. 23; and as this letter plainly states *why* this appropriation was not obtained, we have secured his permission to publish it, and here it is:

*Dear Mr. Root:*—Replying to yours of the 16th, our situation is quite different from what Prof. Surface had to contend with in Pennsylvania. He did have an appropriation of $500 with which to meet "overhead expenses," I understand, whereas we have *nothing*. A system of volunteer inspectors would involve a pretty heavy correspondence for this office, and this we can hardly undertake with no money with which to defray postage, stationery, stenographic expenses, etc. What is more, now that no appropriation has been made for foul-brood eradication, I am not officially supposed to have that work on my hands, and my time is fully taken up with other lines of work. What I have done, however, is to notify the county associations that in all cases where they will defray the expenses of the inspector (the amount of the inspector's compensation to be arranged between the association and the inspector) we will furnish the inspctor with an official appointment, and the necessary authority for the work .

As a matter of fact, our Texas inspectors have in the past been little more than volunteers. They have been paid at the rate of $3.00 per day for time actually employed, and out of this have paid their own local traveling expenses and furnished their own conveyances. They were really giving their time to the State, and breaking even on the cash outlay involved.

I may add that the beekeepers of the State evidently did not strain themselves any to see that the appropriation was renewed. So far as I can learn, only one beekeeper took the trouble to visit Austin for this purpose while the last legislature was in session. If the men whose property is at stake have no more interest in the eradication of bee diseases than this, why should *I* work nights and holidays, and go to Austin and lobby for foul-brood appropriations at my own expense? I have never received a cent of salary for the time and work devoted to foul-brood eradication. The only satisfaction I have is that of *knowing* that nearly a thousand cases of disease have been cleaned up, and that half a million dollars invested in beekeeping has received protection from disease during the past four yars.

Now that things have turned out as they have, I rather regret the last sentence of the article in GLEANINGS, which states that copies of the new foul-brood law were ready for distribution about Sept. 15. Now that there is no appropriation we can not, of course, print any copies of the foul-brood law, and the immense amount of work in other lines absolutely precludes our taking the time to either typewrite or multigraph a sufficient supply to meet all requests. WILMON NEWELL.

College Station, Tex., Sept. 23.

Not only the beekeepers of Texas, but all other beekeepers in the Union, should read this letter. It has happened more than once that apathy on the part of beekeepers has been responsible for the defeat of suitable foul-brood legislation. Law-makers will very often disregard the request of a single individual, even though he be a State official; but if this same official is backed up by a State organization representing a large membership, or if, however, the beekeepers present themselves in a body before the legislative committee having the bill in charge, as a general thing something will be done. We can not blame the legislators for failing to enact laws when the parties most interested in a financial way or otherwise do not show any interest in the measure. If the beekeepers of Texas had sent in a thousand or more postals to the members of their general assembly, the situation would not be as it is now.

Referring to the $500 appropriation available to Professor Surface for foul-brood inspection work, we may state that two years ago he had no appropriation. Having the law, he was able to enlist the services of quite a number of volunteer inspectors whom he clothed with police authority. During the past year he was able to get $1000 for two years instead of $3500 for one year. He made the first $500 go as far as he could. He may have to depend largely on the volunteer inspection work as before.

# Stray Straws

Dr. C. C. Miller, Marengo, Ill.

R. F. Holtermann, you wonder, p. 651, why the capacity of smokers for fuel is not greater, so as to save more time. The answer to that is easy, friend H. It's because we're not all great big fellows like you, with strength to burn. I'd rather waste time to load up two or three more times in a day than to waste a good deal more in the way of strength by lugging around too heavy a smoker. The chief objection to the average smoker "in this locality" is that it wastes strength by having the spring unnecessarily stiff. We'll let you get big smokers to save your time, if you'll let us save our strength.

That talk, p. 660, about selecting the right seed to improve the corn crop, thus adding thousands to the general wealth, is capital. And it forms a fine text for the improvement of bees. If every beekeeper in the land would take as much pains in selecting the right stock to breed his bees from as A. I. Root advises about corn, it might easily increase the total of honey 25 per cent, and that without increasing the labor of beekeepers. I think it would be a gain to beekeepers, and I know it would be a gain to the consuming public. And there's another thing I know, and it's this: That so long as the great mass of beekeepers are so listless about it, the few who do make a business of improving stock will gain by it —*big*.

A Roadside Weed of Worth is the caption of an item in *The Country Gentleman*, in which the editor says: "Farmers are learning that fields too dry, too stony, too hard to grow any thing else, will become green and valuable with sweet clover; and they are learning that stock relish it as much as alfalfa. [Yes, and the farmers of the semi-arid West, in parts of Kansas and Nebraska, are discovering that their uplands that are too hard and too dry to grow alfalfa will grow sweet clover luxuriantly. Pigs and other kinds of stock are now being well fed on these same kinds of waste lands. The time is coming when the Eastern farmer as well as the Western rancher will grow sweet clover on certain of his lands as he now does corn, grass, and other clovers on good land.—Ed.]

Raising hives on 7/8-inch blocks is a help toward the prevention of swarming, but in this locality it is by no means so effective as described on page 593. I practiced it on a large scale years ago, but had to cut cells all the same, and at that had a good deal more than three per cent of swarms. [Locality *may* make a difference. Mr. Vernon Burt is a very successful beekeeper, and conservative in his statements. We are sure the plan works with him. Possibly the strain of bees may have something to do with it. While *you* have been breeding toward non-swarmers, Mr. Burt has given his attention largely to honey-producers. We shall be glad to get reports from others in regard to the success or failure of this scheme of putting hives up on four blocks. Almost any plan will work successfully during a poor season; but when honey comes in with a rush, preceded by a gentle flow, just enough to start brood-rearing at a good pace, it is not always easy to control swarming by orthodox methods.—Ed.]

"There is absolutely no harm in saying in one's advertisement, 'I have the finest queens ever produced.' Such a statement is a general one, and can be accepted as such when summing up," p. 607. But if the advertisement reads, "My bees are all free from foul brood," then the advertising manager must demand proof. Wouldn't that make it a little hard for both the manager and the advertiser? But saying nothing about that, the whole tenor of the thing sounds a good deal like saying, "There is absolutely no harm in lying in general, but you must be careful about lying in particular." If two different advertisers say, "I have the finest queens ever produced," one or the other must be lying. Indeed, I can not conceive how any one can truthfully say, "I have the finest queens ever produced" unless he has actual knowledge of all queens ever produced, and who has that knowledge? The fact is, and it is a lamentable fact, that one does not expect the exact truth in advertisements. A lie is a lie, whether general or particular, in an advertisement as well as elsewhere. It is gratifying to know that at a late meeting of the national association of advertising men, "Truth" was adopted as their motto. Let's have the truth, both in particular and in general. [We sometimes say a horse goes by "like lightning;" and the same kind of hyperbole seems to have crept into much of present-day advertising; but the time has come now when an exact and honest statement without exaggeration will bring in larger returns of money than boastful advertising that tries to make the buying public believe what it knows is not true.—Ed.]

Frank A. Gray asks how to pack a section or more of honey for parcel post. Doubtful if comb honey can yet be sent by

parcel post. If a single section is sent, it might be in a light box with corrugated paper around it. For a larger package use a safety shipping case, and I don't know whether it would be safer to have extra corrugated paper around the case, or to send without, so the honey can be seen through the glass. [As we have said several times before in these columns, we repeat again, we hope that, for the present at least, beekeepers will not commit the folly of attempting to send comb or extracted honey by parcel post. The disastrous experiences of those who have tried it will, we fear, so prejudice the postal authorities that they will never allow honey to be shipped in that way. We believe it can be done some time in the future; but we ought not to make the fearful mistake of prejudicing our chances for all time by making the attempt now. Nothing can disgust the general public more, and the postal authorities as well, than to have their parcels daubed with honey. For pity's sake, brother beekeepers, do not try it. Parcel post is on trial to a certain extent. While we believe it has come to stay, we should give the system a fair test, and that means, not to attempt the impossible until suitable regulations have been made whereby honey and other fragile articles can be given a classification and handling by themselves. Just now, for example, the women of Cleveland are sending paving bricks by parcel post to the man who has charge of the streets of Cleveland to stir him up to the need of repairs. If one of the "pavers" is put in a sack with a section of honey there is going to be a mess as sure as fate. See editorial column. —Ed.]

That item from the *Farm Journal,* p. 629, is fine, except where it makes too strong a claim for honey. Aside from any moral question, there's no gain in the long run by going beyond the strict truth. I wonder what is the average dryness of honey. Is it, as claimed, *usually* "less than 20 per cent of water"? I don't know about that, but I do know that another claim is away off which says, "Honey will keep indefinitely. . . . Actually, honey improves with age." I kept a sample of beautiful white extracted honey until it was as black as molasses, and utterly spoiled with age. Would any one claim he ought to get a better price for his honey because it is a year old? There are enough good things about honey that we ought to teach the public. Please don't let's get in the way of lying about it. [By consulting Bulletin No. 110, from the Bureau of Chemistry, United States Department of Agriculture, by Brown, you will find the average analysis of honey as follows:

| | |
|---|---|
| Moisture | 17.70 per cent |
| Levulose | 40.50 per cent |
| Dextrose | 34.02 per cent |
| Sucrose | 1.90 per cent |
| Ash | 0.18 per cent |
| Dextrin | 1.51 per cent |
| Undetermined | 4.19 per cent |
| | 100.00 per cent |

It will be seen from this statement that less than 20 per cent of water is correct, for Brown is known to be one of the best chemists in the United States.

About honey keeping "indefinitely" and improving with age, suppose you look at the September issue of the *National Geographical Magazine,* p. 999. On that page you will see where some findings from one of the pyramids of Egypt are illustrated and described. Among other things we read:

FRESH HONEY 3300 YEARS OLD.

Most startling of all was the discovery of a jar of honey, still liquid, and still preserving its characteristic scent after 3300 years! "One looked," said Mr. Weigall, "from one article to another with the feeling that the entire human conception of time is wrong. These were the things of yesterday, of a year or two ago."

If we are correct, there is another account of honey being found in the pyramids, and it was in excellent condition. We positively know this: We have tasted extracted honey that was twelve years old. Some very interesting data on this subject will be found on pages 712 and 713 in this issue by R. C. Aikin.

Referring to the sample that you kept until it was "as black as molasses," the question all hinges on *how* you "kept" it. Honey should be kept in a dry *dark* place. Conditions inside of the pyramid, as we understand it, were ideal for the preservation of human bodies, of monkeys, of dogs, and of cats, which were also mummified. If that were so, why would not honey keep under conditions which were perfect—possibly more so than we can supply in this country?

Is it not true that good extracted honey will improve with age up to a certain point when conditions are right? Honey that has not been thoroughly ripened will improve very much if kept in open vats in a dry atmosphere. Even comb honey, up to six months or a year old, will have a richer and mellower flavor providing it does not granulate. Perhaps it is too startling for the average mind to conceive of a honey 3300 years old, "still liquid," and still preserving its "characteristic scent." But is there another food in the world, of a semi-liquid character, that will keep as long?—Ed.]

# SIFTINGS

J. E. CRANE, Middlebury, Vt.

One of the neatest yards of bees I have seen this season was one where a few sheep were kept, and no lawn could be more free from grass and weeds. I don't believe the use of sheep for this purpose has been half appreciated.

* * *

Mr. Chadwick's estimate of the income that could be expected from a yard of bees as an investment in the hands of a fairly good beekeeper, page 441, would be a fair estimate in this part of the world, but the difficulty would be to find the reliable beekeeper.

* * *

I know of no business that is carried on with so little actual knowledge of it as beekeeping by the average beekeeper. He knows that bees need a hive; that they swarm, make honey, and are made angry by sweaty horses. Well, some of them are learning these days that bees have diseases, like other animal life, to their sorrow.

* * *

Friend Byer, on page 438, discusses the quality of Southern honey. Now, I know it is a sure thing that they produce some fine honey in the South, for I have eaten it right out of the hive in Florida, and found some the equal of our best Northern honey. And I have eaten it on the table of my friend J. J. Wilder, in Georgia, and I know it was good; but it is not all so. .

* * *

If you buy comb-frames ready made, and holes in end-bars already punched, you are ready for wiring; but if you make them yourself, the punching of holes in the end pieces is quite an item. But some one has told me this season that using a thin saw and cutting a slot down half way through the end-bars, where the wires are wanted, is quicker than punching holes; and then the wiring is simplicity itself, for you only have to place the wire in the slots without the bother of running it through holes at each end. This cutting or sawing into the end-bars might seem to weaken them; but in time the bees will soon fill the slots with propolis, and make them all right.

* * *

A recent number of the *Technical World* tells of an invention to attach to a hive, a sort of speedometer that will register the number of bees leaving or entering a hive during the day. This would, if it proves practical, solve several interesting problems that we have been heretofore unable to unders.and perfectly, as, How many bees does it take when gathering honey freely to gather a pound? How many bees go out each day, and how many return? How many more are lost on windy days than on those days that are pleasant? How many more bees does it take to gather a pound of honey during seasons of comparative scarcity than when the flowers are rich in nectar?

* * *

On page 437 Dr. Miller refers to compensation to those whose foul-broody colonies are destroyed. A bee inspector has often to meet this inquiry: "Does the State pay for the loss?" The State certainly ought *not* to be held responsible for the loss caused by the bees being diseased; and if the State sends a man, paying for his time and expenses, to show to the owner of a lot of bees their condition, and instructs him how to get rid of disease, it would seem that the responsibility of the State would cease. If the owner of a lot of diseased bees refuses to clean them up after he is told how, but leaves them to spread contagion all around him, he is entitled to little sympathy, whether the inspector destroys them or they are left to die without "medical assistance."

* * *

My dear Mr. Riebel, my sympathies are with you as you relate on pages 445, 446, the condition you find honey in stores. Oh, my! but doesn't one want to shake up both the slovenly beekeeper and ignorant grocer, and give them both a piece of his mind? As I go around among beekeepers my astonishment at their ignorance and folly never ceases. I find hives with supers resting directly on the frames, and glued down solidly with propolis, or perhaps an inch space between them, or perhaps a super without sections, or bottom with combs built from the top of the super to the top of the hive, or combs running at every angle to the top-bar of frames, or, perchance, a whole yard without a super on, or scarcely a chance to put one on, or supers without separators, and the combs built to suit the whims of the bees. Oh, dear! How can such be made to see their folly, and make them realize that they are losing dollars to save cents? They won't take a journal—no, no; they can not afford it. GLEANINGS for July 1 is worth all the journal costs for ten years just for the information it gives along the line of marketing honey; but, alas! they can not see it.

# Beekeeping in California

P. C. Chadwick, Redlands, Cal.

A correspondent speaks of a bee-tree that contained a million bees and a barrel of honey. I guess a million bees could gather a barrel of honey all right. Some bees, though.

* * *

The Miller plan of introducing queens seems to be standing the test wherever it is tried, but I will stake my reputation that there are certain conditions under which this plan will also fail. In a recent issue of the *Western Honey Bee,* Mr. J. D. Bixby recommends the use of tobacco smoke when introducing direct.

* * *

I read a report in our local paper that the office of bee inspector is to be discontinued for the present. I am inclined to believe that it is only a report, and is not being seriously considered. The office of bee inspector was created by a State law, and it is difficult for me to understand how a county board of supervisors could suspend its action. We have been getting much needed work from our inspector, M. J. Meeker. I say needed work, for it has been many years since we have had a man in the office who has taken hold with energy. Mr. Meeker has done much effective work in the few months he has been in office.

* * *

In regard to the cutting of alfalfa for hay, I think the tendency of the farmers in this part of the State is to let it mature a little more before cutting. This is especially the case where it is to be used for horse feed. One of my neighbors ordered a carload from Imperial Valley, with the stipulation that it was not to be cut until well matured. Others are taking the same precaution. Alfalfa, when cut before blooming, is the source of much trouble among the dairymen. It is often dangerous to feed when cut before blooming, on account of being poorly cured. It then causes bloat to an alarming extent among cows. I lost one cow from that cause, and saved another only by the prompt arrival of a veterinary. If allowed to get thoroughly dried it crumbles and powders when it has been cut too early until there is great waste. If baled too green and damp, as most of it is, the center of the bales is moldy.

* * *

P. 601, Sept. 1, Mr. Byer says, "I heard a farmer once say that farming is a gamble on the weather." This reminds me of hearing a merchant tell several farmers who were sitting around his stove that, if farming was not the best business on earth, they would all have been broken up long ago. I have thought of his expression many times, and am convinced he was right about the matter. If the average farmer in the middle West would spend as much for fertilizer, and practice the intense farming that is practiced on California orange-groves, he would get rich faster than many of those who have sold good farms in the East and bought orange-groves in California. But with beekeeping it is somewhat different, in that bees require much more attention in the East than here; and if the same attention were given the bees in this State as they receive in the East, the western beekeeper would fare more sumptuously. A neighbor said to me a few days ago that it is the Eastern beekeeper who keeps bees, but that it is the climate that keeps most of them in California. We have many excellent beekeepers in this State, but I think most of us will admit that the business is not worked on an intense basis here. I am sure that I do not follow mine as closely as I did while in the East.

* * *

I read in the last issue of Gleanings an account of the Hamilton County (Ohio) convention. Nothing strange about that to many; but to me it was of peculiar interest, it being my native county. My mother and father were born and raised in that county. Many of their reminiscences as told to their children are fresh in my memory. They are now nearing their fourscore years, having celebrated their golden-wedding anniversary several years ago. There was a custom in the early days of furnishing the harvest hands liquor in the field at harvest time. Mother and father were bitterly opposed to the practice, and made up their minds to get the grain cut without the use of liquor in the field. Father doubted if it could be done; but mother's strong desires in the matter were followed. There was some difficulty in getting it accomplished, but it was successfully done, to the astonishment of many of their neighbors, and the precedent was so strongly followed in the future that it was only a short time before the practice was stopped altogether, much to the advantage of the farmer as well as to the benefit of the men themselves. It is easy to join a popular movement; but when two young people start an unpopular movement like the above they deserve the gratitude of the community.

# Beekeeping in the Southwest

Louis Scholl, New Braunfels, Texas.

THE "MOVIES" AND BEEKEEPING.

Moving pictures are all the rage; and while there are some objectionable features connected with the way the moving-picture business is overdone, yet there are some very good lessons that can be learned from them. I have often objected to the too constant going to moving-picture shows, especially of school children. Another objection is raised against pictures that ought not to be shown on account of the evil effects that they may have, especially upon the younger people. But there are many films of a purely educational nature, and many of these are valuable indeed, as much can be learned from them that would otherwise remain unknown to many persons who do not have the opportunity to travel or even read about these things.

Making use of the educational feature of these films is something that has been uppermost in my mind for several days this week, and it may be of interest to mention the reason for this. It happened that one of the picture-film concerns decided to make up a film of scenes illustrating many of the different industries we are engaged in here at New Braunfels. This is to be shown here in our local picture shows first, and then this film will make the rounds of the company's circuit of a large number of cities and towns of the State. In this way a wide distribution will be obtained, and the advertising feature of the film should be worth considerable to our city, and to those who are represented in the various industries displayed by it.

Beekeeping, in connection with poultry-raising, as a hobby and side line, will be displayed as being the business or industry represented by the writer. Handling the bees in the apiary and removing some honey, the very thing that we produce for sale, and that we want to advertise, and this followed by views in the poultry-yards, from which fine stock and egg-settings are our specialty makes interesting picture-show stuff. Each firm or individual is entitled to a title preceding the pictures that are reeled off, which will explain what follows in the scenes.

It occurs to me that such film displays should aid in advertising one's business, to a certain extent at least; and if the title preceding one's industry is worded well, good results should be obtained. It depends, of course, how a thing of this kind is shown up, and whether the title and what follows will awaken the thought that we would like to have awakened to bring the results desired. In addition to this the question arises as to the cost of such roundabout advertising in comparison with the results obtained.

The charge for making up a thousand-foot reel, showing our various industries of the city of New Braunfels, is based on $200 for the cost of the entire film. Thus each subscriber represented is charged 20 cents per running foot, according to the number of feet that he wishes to use. A hundred feet, therefore, would cost $20.00. While a hundred feet does not run a great while in a single show, it is true, yet it must be figured that such a film will be run over and over again in many different places during its circuit; and even after such a circuit is completed, the film may be taken over by managers of other circuits if the film is interesting enough. Just what will be done with the film we are having made here, and what the consequent results will be, is difficult to predict; but we hope to be able to report at some later time whether the venture has been a success or failure.

Right in connection with the above I have thought that entire films made up of interesting matter about the handling of bees, hives, etc., the honey, honey put up in nice packages, and stored on the shelves in glass, with proper signs at various places all through the film, bearing the words "Honey for Sale" would be an aid toward creating a greater demand for honey. Proper titles scattered throughout the film scenes could be made to explain in such a manner *that the spectators would be honey hungry by the time the end of the film is reeled off.* This sounds like a fairy tale, and there may be something in it. In order to ascertain the value or the failure of such advertising, only a trial is necessary, and it seems to me that the National Beekeepers' Association is the body that should make such a trial. The funds of the old League, subscribed for the purpose of advertising the beekeepers' products, should be available for this purpose. I believe that several good films could be made up that would be a real credit to our industry; and if gotten up with the proper care, and the advertising idea kept carefully in view, good results ought to be obtained. The cost, however, in comparison to the effect that such film advertising would have on the demand for honey, may be too great. That would have to be investigated. If it is not found to be so, I should like to see an experiment of using the "movies"

*Continued on page 730.*

# Conversations with Doolittle

At Borodino, New York.

DIFFERENCE IN BEES.

"Is there a difference in bees as to their characteristics, ways of working, etc.? I was told a few days ago that there is as much difference in bees as there is in any of our domestic animals."

Nearly all practical beekeepers recognize that there is a great difference in the varieties of our bees, while the most observing are free to admit that there is quite a difference among colonies of the same variety. I hardly think that anybody having had very much experience would say that all bees are alike in temper. I believe he would be ready to admit that some colonies are more vicious than others. Bad handling will make almost any colony of bees ugly; but there are some colonies that are so cross that it is almost impossible to open their hives unless they are thoroughly subdued with smoke.

I had a colony of dark Italian bees once that I could hardly to do any thing with, while nearly all the other colonies having queens from the same mother were so quiet that they could be handled without veil or smoke. But with that colony it was with much difficulty that the hive could be opened and the combs lifted out unless an assistant kept smoke pouring in upon them all the time. And this trait was characteristic of them until I made a change of queens.

Some colonies will cap their surplus in the sections white, while others will cap so closely to the honey that all of their output will have to be classed as second. Some colonies will fill the sections with honey completely, capping even the cells all around next to the wood, while others will leave "peep holes" in each of the four corners, and sometimes the comb will not be secured to the sections on the sides at all —just attached at the top and bottom. Then some colonies will build comb only when there is a fairly good flow of nectar, stopping whenever there is a slight scarcity caused by a few cool or rainy days, so that the completed sections have an uneven or "washboardy" appearance. Other colonies, when they commence in the sections, expect to fill them without stopping to think whether the nectar yield fail before they can complete the sections. Hence the whole super or supers of sections come to a finish as smooth and perfect as if planed and sandpapered. I once had a colony which gave 309 pounds of such section honey, and used this difference in comb-building to great advantage by stocking three-fourths of the colonies in the whole apiary with young queens from the mother of this colony.

Some colonies will gather great quantities of propolis, and plaster it all over the sections and separators till it runs down and collects in drops in the corners, much to the disgust of the one who has the sections to clean for market. Other colonies will plaster the combs with propolis, thus spoiling them for future use as bait sections, and giving the cappings of such combs as are marketable a disgusting appearance to the one desiring to purchase honey. Other colonies will put in burr and brace combs between the supers, or between the supers and the hive below, often attaching these to the separators and the nice cappings on the face sides to the combs in the sections, so that, when the honey is removed from the supers, the chunks of capping partly, if not entirely, spoil the salableness of such sections.

Some colonies will work earlier in the morning and later in the evening, and keep persistently at it, when the scales will show only a few ounces gain each day, while other colonies seem to think there "is nothing doing," and so loaf about the hives all day, or try to rob these industrious ones. The business thrift of other colonies is very marked. With a far smaller number of bees than some of their neighboring colonies have, they are continually increasing their stores, and at the end of the season they will have much more to show for their season's accumulations than will colonies that were more populous in early spring.

Some colonies gather more pollen than is needed, crowding the brood-combs so full that there is hardly room for the queen to occupy with eggs for the well-being of the colony, or spoiling much of the section honey by filling with pollen many cells throughout the whole super.

Much more might be said in regard to the variation and different traits of different colonies; but the point I am anxious to bring to bear upon all who read these lines is this: All these differences hinge on or depend upon the queen and the drone with which she mates. We say this colony does this, and that colony does that; but in reality the whole depends on *one individual* bee, and that is the queen. Hence it is to the interest of each beekeeper to know that all his queens come up to the highest score along all the different points that tend toward perfection.

# General Correspondence

## WHITEWASHING IN PLACE OF PAINTING HIVES

### Painted Wood Not as Porous, and Therefore Not as Good for the Bees

BY M. G. DERVISHEIM

The walls of beehives should be porous on the same principle that human clothing should be porous. The feathers of birds, too, are arranged so that there are air-spaces. Porous matter is not conductive of heat and cold, just as the human clothing is not, and keeps its contents in natural heat. Ice is wrapped in felt to prevent the cold from escaping and the outside temperature from penetrating. If one's clothing were made of India rubber or of oilcloth the body would be in an unclean and unhealthy state. The hive is the clothing of the colony of bees, and is intended to retain the heat and to let the damp and gas produced by the breeding and breathing of the bees escape. Wood, especially that of a soft quality, is porous, and therefore it is the best material for the hive.

In olden times, most hives were made of straw. Straw skeps, I believe, keep the bees in a dry state and warm—the former owing to the porousness, and the latter owing to the dead air contained in the straw. In the eastern parts of Europe and in Asia Minor most hives are made of dome-shaped baskets, and the outside of these is covered (plastered), about one inch thick, with mud consisting of earth and cow's manure. These hives keep the bees in a very comfortable state.

Hives made of wood come second, but owing to the great advantages derived from modern improvements in apiculture there is no doubt that wood is the best material (especially soft and light wood) for the construction of hives, provided it is not rendered impermeable by the application of oil paints, etc.

In winter and spring the inside of a hive occupied by a strong colony and covered with any impermeable material, such as oilcloth, gets wet owing to the vaporized water from the breathing of the bees, to the greater consumption of honey, and to the insufficient porousness of the body of the hive. Part of this vaporized water leaks from the entrance in a condensed state, and this shows the excessive amount of dampness. No doubt such a state is harmful to the bees within.

I strongly recommend whitewashing with quicklime. It is the cheapest and easiest method. It is known to everybody that white reflects the heat from the sun, and the hives look nice and clean.

Take six pounds of quicklime, sprinkle on this by degrees about a gallon of water. When it gets hot, and the quicklime swells and cracks, sprinkle more water. A little later pour on about four or five gallons of fresh water and mix it with a rod and then take about half a pound of alum, break it into small pieces and melt it over a fire with a little water. Or better, pound it and mix it with the prepared lime for whitewashing. This alum makes the whitewash stick well to the wood and does not come off on one's clothes or hands when handling the hives. In the absence of alum ordinary cooking salt can be used, but alum is preferable. This whitewash can be applied quickly with a broad whitewashing-brush.

For the purpose of observation, for 12 years I have made use of several hives not painted and some which were painted. The inside of the hives which were painted became as black as if lamp or chimney black had been applied, while those which were not painted have remained light brown in color, which is, of course, the color of propolis or polish made by the bees. I recommend that progressive apiarists try a few unpainted or only whitewashed hives and then compare them after one or two years with the state of the painted ones. At the same time I also recommend that in winter and spring they use on the frames quilts of porous material, for instance of cotton wool, or bags filled with chaff or sawdust. I make use of empty merchandise cases which serve for protecting the hives on all sides from the direct rays of the sun. My way of covering the top of the brood-nest is with boards $\frac{3}{8}$ inch thick. In this semi-tropical climate (35 latitude) this permits the dampness to escape very slowly through the thin strips laid over the top-bars of the frames, gives very slow ventilation, and allows escape of dampness in winter through the joints.

For higher latitudes I should think sawdust or chaff cushions over the frames would be best for winter. A chaff sawdust, with two or three sheets of rough brown paper underneath, will keep the heat without preventing the escape of dampness, and will drive out the dampness.

On p. 812, Dec. 15, 1912, Mr. J. E. Crane, as foul-brood inspector, reports, "I found the bees in box hives in decidedly better condition, as a rule, in the spring, than those in frame hives." He says further, "One

man asked me in regard to changing from box to frames, or patent hives as he called them. 'Don't, don't,' I said, 'unless you are going to *use frames,*' for of what earthly use are frames in a hive unless they are used by a beekeeper? They cost more, and are not so good." I have reason to believe that the box hives referred to are not painted, and if I am correct the better state of the bees in the spring is owing to the porousness of unpainted wood—that is to say, the hive is free from dampness. And the state of the colonies in movable-frame hives is not as good as in box hives, because there is less chance for the dampness from the painted walls of the hives to escape, paint having rendered the wood impermeable.

In Bulgaria I have seen hives made in the shape of a bell, the same as straw skeps, but much wider and taller. These are practically like baskets turned upside down and covered with a kind of plaster made of earth. Such hives are extremely porous. Bulgaria is about 43 latitude. Cold is severe in wintertime, and yet bees are very comfortable in this kind of hive, and they are wintered outdoors.

Nicosia, Cyprus.

## SOME OLD HONEY

### Samples from Ten to Thirty Years of Age

BY R. C. AIKIN

On March 27, 1884, I reported to the *American Bee Journal* that bees wintered well on summer stands, and in fine condition at that date. See p. 218, for April 2d issue. In the Sept. 24th issue of the same year on p. 621 appears the following letter:

> Worst season for ten years. We have no new honey this year, and all of the old honey is gone. I have 80 colonies of bees, and not five pounds of honey. One man had a little early honey at the fair, and he will have to feed that back for winter. We have less honey this year than for ten years past. Can not some one send us enough for a taste when company comes?
>
> Shambaugh, Iowa, Sept. 15. R. C. AIKIN.

Some time after this letter appeared, a preacher, a friend of mine, handed me a quart bottle of honey which had been handed him by some friend where he had been preaching, or at some meeting, in another part of the State. The bottle was filled with extracted white-clover honey, and a label on it which read as follows: "The Promise is Fulfilled. This is the land that flows with milk and honey, and here's the honey from H. M. Noble's apiary.—Swedesburgh, Iowa, 1871." Later I changed the label date to 1884. I suppose he put on the old one just to give his address, etc.

That is all I know of Mr. Noble. I think I wrote him one time about the honey, but never had any communication from him. The bottle was set up in my honey-house, and stood around for several years. At one time it lost its cork and stood open for some time, and a few wax-moth-larvæ droppings got into the honey, and then I recorked it. No record was ever kept, but within probably a year or so the honey candied. Still later it partially liquefied, then a thin layer recandied over the surface on top. That layer got displaced in handling the bottle, and sank to about the middle, resting one edge on the candied honey in the bottom, and the other edge against the bottle side, standing at an angle of about 45 degrees, where it has remained ever since.

I carried the bottle with me to Colorado when I moved there; then to Chicago, and had it on exhibition at the 1893 National convention; back to Colorado again; showed it some times at our Colorado State conventions; then brought it here with me two years ago last December. I have not sampled it for several years, but we used to taste it occasionally until about one-third of it disappeared. Of what is left, it has for some years been about half candied from the bottom. Very little change has been observed for the past ten or twelve years. When I received it, it was very clear; now it is a reddish dark shade about like sorghum molasses. It must be 29 years old this fall. I had this in Colorado for about 20 years, and in that climate the tendency of syrups is to become more stiff or thick. Now, after 2½ years, here it is still quite thick, even in this August weather.

BOTTLE NUMBER 2.

In 1889, at Fort Collins, Colo., I took a Hood's Sarsaparilla bottle and filled it with very clear alfalfa honey and set it up in the gable of the honey-house, close to the roof, above a window. That winter it candied solid, but the heat of the next summer partially liquefied it. Finally it candied from the bottom upward just about half way. There it stands to-day, and is before me on the desk now as I write. The candied lower half is about the appearance of lard fried from meat with just a tinge of dark. The upper half is clear enough that objects can be seen through it, bottle and all, and is of a reddish amber hue. The bottle is sealed, and has been opened very few times since filled, and not at all for several years. It seems a trifle thinned on top, but shows no sign of ferment. This is 24 years old.

SAMPLE 3, JUST OF AGE, 21 YEARS OLD.

This is probably alfalfa and sweet clover mixed, or at least from one of these sources.

It is in a vase of globular form, the bowl being in outside measure about seven inches wide and a good six deep, then the neck and mouth is straight, and about 3½ inches opening, the inside of neck being ground, and a glass ground stopper to fit it just as bottles are made with glass stoppers.

This sample was produced at Loveland, Colo., in 1892. As is usual in case of all extracted honey there, it promptly candied, and with compact close grain resembling lard. How long it remained candied I do not remember, but, as nearly as I can recall, it largely liquefied within three or four years, and gradually in part crystallized until about half of it was of crystals about twice the size of ordinary plasterer's sand. Once the vase in moving got wrong side up, and a little of the liquid oozed out. Now it stands with the lower half liquid with crystals in it; the upper half just crystals. It looks like a very coarse light-brown sugar. There is just a possibility that I once applied heat, and liquefied this, but can not now tell. This vase has been unstopped often, and is not sealed only as the honey clinging to the ground stopper seals it.

NUMBER 4, 19 YEARS OLD.

This is in a twin vase to number 3. It is probably alfalfa and sweet clover. I know that in those years we usually got some alfalfa flow in June and July; then in July and August the clover and the mixed crop harvested together. I had no thought then of how long those samples would be kept, nor of how interesting would be a full history, so kept no records. Later I began to realize my mistake, and to put date records on them. I now wish that I had complete records.

This sample I think has never been liquefied by artificial means. I know that, like all extracted honey there, it candied as solid as fine-grained lard. I can not remember all of its changes, but to-day it stands with a little better than half, the lower half, looking like so much scorched lard, and is compact as would be so much dirt settled in a pail of water; the upper portion being a liquid with no granules in it, is of a dark reddish-amber shade. This, and sample No. 2 that is 24 years old, are almost identical in appearance in the candied lower half, being like so much scorched lard, and compact at the bottom, and the liquid part at the top, and of amber color. There is an abrupt change from the candied to the liquid.

SAMPLE NUMBER 5, 18 YEARS OLD.

This is in a quart Mason fruit-jar. It was produced at Loveland, Colo., in 1895, and was liquefied and exhibited at the fair in 1896. It is full, and sealed as fruit is sealed in these jars. To-day it stands with the upper third of very coarse granules like sugar; the lower two-thirds is an amber liquid with coarse granules all through it. I think that those Colorado honeys almost invariably granulate very fine at first, but after being heated the second granulation is a truer crystallizing, but never solid. I have repeatedly noticed the older once-melted honeys showing that tendency to form coarse crystals scattered throughout the liquid.

These samples as they grow old are becoming more and more interesting to me I often look at them, and recall the strenuous days when in my prime I was wrestling with bee problems. The two vases have for years stood either on top of my desk, or on the bookcase, or somewhere in the living-room, constantly in the light, and have been knocked about, sometimes being taken to fairs or conventions. They make a pretty ornament in the room. Each vase contains about a gallon of honey.

I have a sixth sample in a quart jar. This is just a remnant of dry granules. The jar not being sealed tightly while moving, the liquid leaked out. I have just sampled it, and it still tastes like honey. It is 17 years old. I did have other samples 20 years old and even older, of different sources of bloom, but they were put in tin pails, and the pails corroded, and spoiled the samples. There should be no metal in the receptacle for preserving honey samples.

Blessing, Texas.

## A BEGINNER'S EXPERIENCE

### How an Amateur Starting with a Stray Swarm became the Owner of Thirty-four Colonies

BY C. E. BUSH

I have always had a distant respect for the honeybee; but my actual experience with bees dates back about a year. My father hived a stray swarm, and then I became interested in bees, and the bees became interested in me.

A second swarm came, and we hived that. After that it fell to my lot to take care of the bees, with the friendly assistance of one of our neighbors, who is also somewhat of a novice with bees. Equipped with an old hat, a good-sized piece of mosquito-netting, and a pair of old gloves, with some sock-legs sewed on for gauntlets, I began to think that I was really a beekeeper.

The next summer we caught three swarms. I took one of them from an old tree, and another out of a hay-barn. The one taken

from the barn was a very large colony, and it was necessary to make three trips in order to get all of the bees. This one stray swarm made two good-sized colonies and a small one. I paid the neighbor fifty cents to catch a swarm for me, making a total of seven colonies. Then I became very enthusiastic and bought ten colonies, going thirty-five miles in December to get them.

In February I took two first-class beemen into my apiary to look my bees over. We found that one colony had been robbed out. One of the men remarked that conditions seemed to indicate foul brood. We opened the hive, and there we found foul brood in an advanced stage. We examined the rest of the colonies, and discovered that four others were diseased. If any beekeeper knows by experience how a novice's heart gets sick, then he will know how I felt. The two men whom I mentioned before told me that I would have to clean up the apiary, and explained how to do it by the McEvoy treatment.

I had a tank built in which to do the boiling. One of the men came over to help me. We shook the bees on some old comb and fed them some warm syrup. Then came the process of scalding and cleaning the frames, etc. After I took my assistant home, the rest was left to me. On the evening of the fourth day I took the clean hives and removed the old hives on the stands, placing the clean ones in their places. I shook the bees upon new clean foundation, and on some pieces of clean comb I tied into a frame in each hive. I supplied them with some more syrup, which they cleaned up and put in the comb.

I fed them again on the morning of the fifth day, and all seemed to be doing well until about three o'clock of the same day when two of the colonies left their hives and settled in the grass. I was stumped at first, but set my wits to work. I happened to remember that some one had said that a little brood would help bees in cases of this kind. I drove two miles and took from two clean colonies a frame each of brood and honey, returned home, relieved the bees, and gave them the brood. As soon as I set the hive before them on the ground, a few bees went in and discovered the new frames of brood. They rushed back and settled on the alighting-board, after which they "stood on their heads and waved their wings" for joy. Then it seemed as if the other bees of the colony could not rush in soon enough. I had no more trouble with them.

Thirteen colonies were left after the experience with foul brood was over. I bought one more colony. I then leased my bees to the man who had helped me clean up the foul brood. I furnished the bees, half of the hives and foundation, and was to receive in return half of the increase and half of the honey. He was to increase all the bees would stand. In March we cleated the hives and cut burlap sacks in halves, putting one thickness of sack over each hive for a screen. We also screened the entrances. We started out one morning early to move them twelve miles, arriving at the out-apiary about 1 o'clock in the afternoon. As the sun was shining warmly it proved to be a very hot day. As a result we lost two of the strongest colonies. That left just an even dozen. My friend was equal to the difficulty, however; for after taking charge of the bees he succeeded in increasing them to thirty-four colonies. The bees, too, did their part, for they made stores enough to keep them through the winter.

Ceres, Cal.

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### Horse Stung by a Swarm; Who was Responsible?

Will you kindly give me your opinion on the following case which happened in this neighborhood some time ago, and which may cause considerable litigation?

A and B are neighbors. A has a lane past B's house 16 ft. wide. B keeps bees in a back lot which is 2½ rods from A's lane. One day as A was coming along his lane he saw a swarm of bees near the far end flying around a tree which is just on the other side of his lane and some distance from the beeyard. A does not wait for the bees to settle, but tries to drive through them. A escapes without injury, but the horse is so badly stung that it dies. Knowing that the swarm came from one of B's hives, can A hold B responsible for the loss of the horse, and collect damages? A. B. C.

[In answer to your question we will say that a good deal will depend on whether proof can be produced to show that the bees that stung A's horse were actually the property of B. For instance, if Mr. B admits that the swarm came from one of his hives, or if one or more persons testify that such swarm issued from one of his hives, and then occupied a position in the highway, as described, possibly Mr. B would be liable for partial damages. In that case we would recommend Mr. B to arrange a settlement with A if he can do so. If, however, there is no proof to show that the bees came from Mr. B's yard, that it was a vagrant swarm, coming from nowhere, then B is not liable. It does not follow that because Mr. B owned bees that the swarm in the highway was his property. As we understand the matter, the burden of proof rests upon Mr. A to prove that the bees were the property of Mr. B.

In any case, we do not believe that Mr. A can collect full damages; and we do not know that he could, even though it were proven that the bees in question belonged to Mr. B. Mr. A had the right to the use of the highway; but if *he knew* the bees were in the highway, and *deliberately* drove through the flying bees, and that fact can be proved, the damages, if any, would be nominal. We should think it would be what would be known in court as a case of "contributory negligence." But assuming that Mr. A and Mr. B are neighbors, it would be desirable to have them adjust this matter equitably among themselves if they can.—ED.]

Apiary of J. L. Strong, Clarinda, Iowa, which has been its owner's sole dependence for many years.

## BEEKEEPING AS AN EXCLUSIVE BUSINESS

BY FRANK C. PELLETT

The general tendency is very conservative toward our industry as a business. We are free to advise the keeping of a colony of bees in the attic, or a few hives in the back yard to supply the family with honey and the beekeeper with an interesting diversion. Enquiring beginners are always warned against taking up honey production for a livelihood because of the fact that some seasons fail to supply a profit.

While to begin beekeeping on a large scale without previous experience and a thorough knowledge of the business would certainly prove disastrous, the same may be said of any other business. Beekeeping requires high-grade talent to handle it successfully, and one should never consider beginning in any but a small way, and increasing as experience and inclination justify. On the other hand, the men of my acquaintance who depend upon honey-production for a livelihood get as large an income on the average, with less capital invested, and less wear and tear, than in other lines of agriculture. We have been entirely too conservative regarding the possibilities of honey production, and I do not hesitate to say to those who wish to know whether they can make a living in the business that, if they will master it fully in all its details, they can do well at beekeeping.

There are many advantages also. The beginner can start with an investment of only a few dollars, and learn the ins and outs of beekeeping while attending to his other business, and not relinquish his source of regular income until such time as he gives the matter a thorough test and has had an opportunity to determine whether he is fitted for the work.

The first essential to success, of course, is a good locality; for without a suitable flora the bees can not gather a profitable crop. Given a good locality, the rest all depends upon the man.

Among the successful beekeepers of Iowa, three men are conspicuous; and these may be, perhaps, considered typical of the lot. J. L. Strong, of Clarinda, has kept bees for 46 years, and for more than a quarter of a century has made them his sole dependence. His home and business have been paid for from the profits of his apiary. In addition to honey production he does an extensive queen-rearing business, and depends for the most part on a single yard which he keeps at home.

F. W. Hall, of Colo, has been in the business for many years, and his standard of living is as high as that of the wealthiest

people of his community. His home is among the finest in the town, his daughters are college graduates, and the family enjoys every convenience and advantage of education and travel.

B. A. Aldrich, of Smithland, has been engaged in general farming on rented land for years until recently. Failing to make this line of work profitable he closed out every thing but the bees, which he had found profitable as a side line, and devoted his attention to them exclusively. Mr. Aldrich says that the only mistake he has made was in not dropping the principal business and devoting all his attention to the side line several years sooner. Mr. Aldrich harvested a crop of nearly 14 tons of honey from 300 colonies last year, and bids fair to do as well, or better, this year. He has the finest equipment in the way of a honey-house and labor-saving machinery that I have ever seen in the hands of any beekeeper; and by this means he is able to do nearly all his own work and thus reduce his expenses to the minimum, which is, of course, impossible with general farming.

Home of F. W. Hall, Colo, Iowa.

In the face of such examples as these we surely need not fear to recognize beekeeping as a dependable pursuit. If a man will recognize the fact in the beginning that there is something to learn, and that to be successful he must go about it in a business-like manner, and observe the same caution that he would do in undertaking any other line of business with which he is unfamiliar, the chances for success are better, in my estimation, than in most other lines which are highly specialized.

Atlantic, Iowa.

## THE OUTSIDE WINTERING OF BEES

### A Nature Study

BY J. E. HAND

The outdoor wintering of bees is practiced with varying results throughout the United States, and even in portions of Canada, where it is rapidly coming into favor. Beekeepers everywhere are coming to realize more and more that open-air wintering is more in harmony with the nature and habits of bees. Colonies wintered in the open with suitable protection will usually have several cleansing flights at frequent intervals, thus enabling them to void their excrement in a natural manner.

Since it is my purpose to measure up the situation with nature's try-square, regardless of any preconceived ideas, perhaps a little nature study along these lines may help to a better knowledge concerning the domestic economy within the hive. It has long been a source of conjecture among beekeepers why an old box hive with open cracks admitting chilling drafts will carry its colony through the winter in safety year after year, in open defiance of all theories relating to moisture, ventilation, and protection. But this is nature's handiwork, unmolested by the blundering hand of man; and a closer scrutiny reveals the fact that the internal arrangements within that hive are in perfect harmony with the habits of bees, wherein every angle and curve of the combs betokens a wisdom of architecture beyond the power of man to comprehend.

Our first thought upon opening such a hive is, "Why do the bees build their combs so crooked and irregular?" but if one looks a little closer he will notice that there is "method in their crookedness," since many are converging toward the center like the spokes of a wheel; and if the examination is made in mid-winter the cluster will usually be found in the center, as represented by the hub of the wheel. The wisdom of such an arrangement will be more apparent when one understands that it is the habit of

bees, so far as conditions will permit, to cluster together in a solid ball as a means of protection against extreme cold. Since this is nature's method, it is safe to assume that, in no other position, have the bees equal power to resist cold. It will be noticed that this arrangement enables the cluster to remain in the center of their base of supplies, and also admits of expansion of the cluster during a warm spell to bring a new supply of food within reach of the cluster. Likewise, it allows contraction during a cold period without the loss of bees that otherwise would be caught on the outside of the solid slabs of cold honey, and perish. While bees are sluggish in their motions in winter, when undisturbed, they are not hibernators; and if a small bunch becomes separated from the cluster, being of insufficient numbers to create sufficient heat to sustain life, they will soon perish with cold. It is thus that colonies are often greatly depleted in numbers in modern hives where no provision is made for the expansion and contraction of the winter cluster.

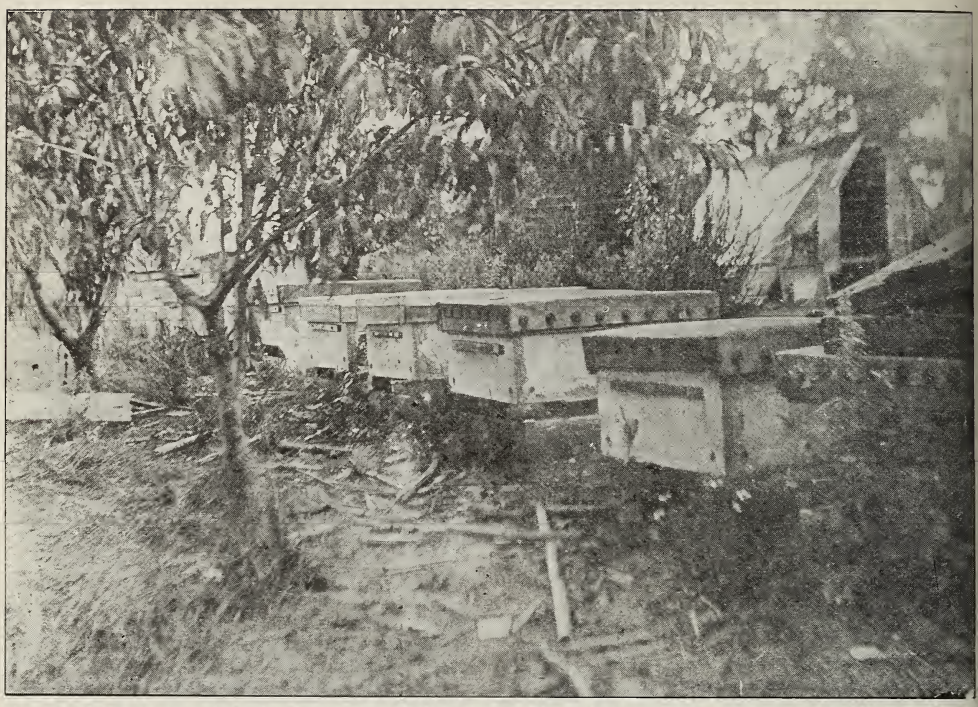
At first sight the bees composing a natural winter cluster appear to be in a semi-dormant state. Such is not the case, however. On the contrary, they are keeping up a constant circulation inward and outward. It is thus that motion, combined with the heat of their bodies in close contact, will enable them to maintain a normal brood-rearing temperature in zero weather, such is the wonderful heat-producing power of a cluster of bees under normal conditions. These are nature's methods untrammelled by man, who deludes himself with the idea that he can improve upon nature's methods. But let us take a view of the internal arrangement of a modern hive, as ordained by the wonderful wisdom(?) of man.

The first thing that attracts one's attention is the absence of sufficient space below the frames to accommodate the winter cluster when suspended in a solid mass from the lower edge of the combs, according to the habits of bees at the beginning of winter. Likewise, the close spacing of frames that is practiced under modern methods leaves no opportunity for a winter cluster in sufficient numbers to maintain a normal temperature by natural methods. On the contrary, they are compelled to spread themselves out in thin layers between solid walls of cold frosty honey, and every layer separated from its neighbor, with no means of communication between them, except by traveling around the outside of solid slabs of cold honey, which would mean certain death. Thus in this unnatural and isolated condition they are unable to employ nature's method of heat production; and, having no other alternative, will resort to an abnormal consumption of food in a vain attempt to maintain a normal temperature, and the result is likely to be death or clogged intestines, followed by dysentery. As a last resort bees will crawl into every empty cell within reach, where, if the weather is *very* severe, they will be likely to be found dead in the spring.

### THE WINTER NEST.

What is the result? The beekeeper comes along in mid-winter to inspect his bees, and, finding them in the condition just described, instead of getting down to the root of the matter, and reasoning from effect to cause, he jumps at the conclusion that a winter nest composed of empty cells, into which bees can crawl for mutual protection against cold, is an important factor in successful outdoor wintering; he even intimates that the honey was removed from those cells for the express purpose of forming an alleged winter nest; while in reality the presence of empty comb in the center of the brood-chamber is easily accounted for from the fact that they were occupied with brood until after the close of harvest. While a winter nest composed of empty combs might well be chosen as the lesser of the two evils, it is entirely inadequate to the needs of a winter cluster, since its presence endangers the life of a colony just in proportion to the amount of empty comb involved. Undoubtedly the importance of an alleged winter nest has been slightly overestimated; and the wise beekeeper will see to it that there is no considerable amount of empty combs in the center of the hive at the beginning of winter.

Let us take a view of the internal arrangemment of a modern hive equipped with the improvements suggested, and measure them up with nature's try-square, one by one. First, a liberal space below the combs, said combs being solid full of honey, will ensure the clustering of the bees in a compact form, suspended from the lower edge of the combs, and below their base of supplies, which is the natural position of a cluster of bees at the beginning of winter. It is the habit of a winter cluster under normal conditions to move upward instead of sidewise until a brood-nest has been established. Therefore as the season progresses, and the consumption of stores removes the base of supplies too far from the cluster, in order to keep in touch with their base of supplies the cluster will advance to a natural position in the center of the combs. Here, in the center of their base of supplies, and in a position affording ample provision for the expansion and contraction of the winter cluster, through the center of the brood-



A part of the apiary of B. T. Bosserman, Williamstown, Ohio, showing his concrete cases holding packing material around regular hives of wood.

chamber, horizontally as well as vertically, with full and free communication among all the bees in the cluster, they will establish a permanent clustering place, wherein their brood-nest will be established. Mid-winter brood-rearing will begin according to the habit of bees in a normal condition. The importance of wide spacing is not so apparent when other conditions are right, and nine frames in a ten-frame hive is sufficient.

This method, when measured with nature's try-square, would seem to harmonize with the habits of bees; and since it approaches as closely to box-hive conditions as is possible under modern methods where straight combs are imperative, it should give equally satisfactory results in wintering. Thus, while we may not improve upon nature's methods we can imitate them so closely as to give equally good results.

Birmingham, Ohio.

## BRINGING COLONIES THROUGH THE WINTER STRONG

### Higher Temperature and More Ventilation Needed

BY WILLIAM BEUCUS

The editor of GLEANINGS has long and earnestly persisted that bee-cellars should be abundantly ventilated. Doolittle, on the other hand, has insisted that ventilation is not necessary. Until the last year or two I was inclined to side with Doolittle, for we have wintered our bees with good success without excessive ventilation, and sometimes without any ventilation whatever. In the winter of 1909 our loss out of 140 colonies was nothing. In 1910, 160 colonies wintered without loss. In 1911, six out of 176 failed to live through the winter. One of these was queenless; one starved because of too much pollen and too little honey; four had been weakened by the attacks of a skunk. In 1912, '13, the bees again wintered successfully, and there were 192 colonies. Many will say, "What more do you want?" The answer is, "Stronger colonies in the spring." We want every bee that can be saved. We have learned to carry through every *colony*, now we want to carry through every bee—if that is possible.

The endeavor to carry through all *bees* led me to the practice of ventilation. I have been troubled during the past three winters with bronchitis, and consequently have been very sensitive to changes in the environment. On the first of each month, all dead bees are swept up and measured, which requires some time. Each time this was done, the bronchial tubes felt raw. Why? It certainly was not the low temperature, for it was warmer in the cellar than outdoors, and no rawness was felt out-

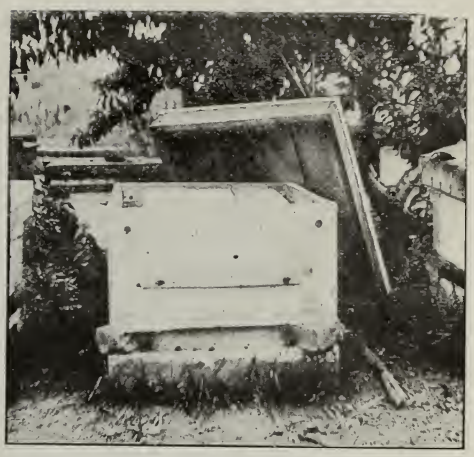
doors. It could not be dampness alone either; for on wash day, when there was an unusual amount of moisture in the house, no ill effects were experienced. That rawness was due to a combination of two conditions—low temperature and damp atmosphere.

Why is one afflicted with colds and bronchitis in the winter, any way? A right answer to the question will shed some light on the question of wintering bees better. There are in the human system four avenues for the escape of moisture and impurities—the bowels, the kidneys, the lungs, and the skin. In the summer the skin is very active the most of the time. Fresh vegetables and fruit are eaten in abundance, which aid in keeping the system in good condition. Fresh air is breathed almost all of the twenty-four hours of the day. The moisture and impurities have abundant opportunity to escape as fast as formed. But in winter the skin is inactive. One does not perspire so much. Fewer fresh fruits and fresh vegetables are eaten, which clogs the system, and impure indoor air is breathed a great deal of the time. Now notice. These acute diseases come in the winter with the four avenues for the escape of impurities sluggish but still open.

How is it with the bees? They have but three avenues for the escape of moisture and impurities—the bowels, the malpighian tubules, which take the place of kidneys, and the tracheal tubes, which take the place of lungs. But when the bees are placed in the cellar, conditions are imposed which close entirely two avenues for the escape of moisture and impurities—the bowels and the malpighian tubules. Thus there is but one avenue left open, and this is obstructed. How is it obstructed? By the moisture present in the atmosphere. Evaporation can not take place rapidly in air which is already at the dew-point. Is it any wonder that the bees become uneasy, and fly out on the cellar floor to die?

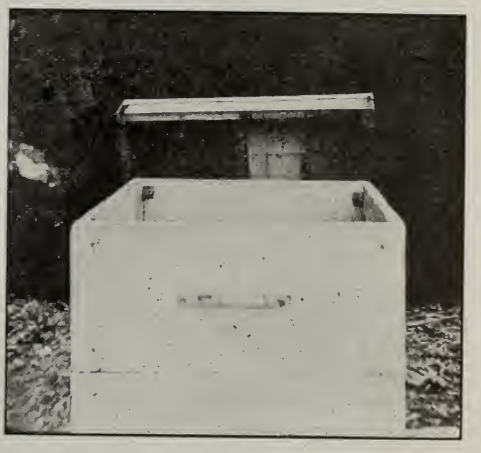
Bees are not great expenders in the winter; but in maintaining a comparatively high temperature for five months there is sufficient waste to demand an easy escape for moisture and carbonic-acid gas.

What evidence is there that bees are needlessly dying? Go into the bee cellar and stay a while with a lantern. Occasionally you will notice a bee which flies vigorously. Take a few of these into a warm living room and notice what follows. Occasionally one will preen itself for two, three, or even five minutes. Is it getting ready to die? It doesn't look that way. Now give it a little honey. Its vigor is quite inconsistent with superannuation. It seems a



Cover removed, showing the hive inside the concrete winter case.

fair inference that these bees leave their hives because they feel uneasy. I have frequently raked into a cluster of bees in the cellar when removing dead bees from a shallow entrance, but the bees did not fly at the light. They hurried back to the cluster. Last February, with a temperature of 50 in the cellar, four feet from the floor, I stood before a colony with a lighted lantern. The bees were loosely clustered, and some were quietly resting on the bottom-board an inch away from the cluster. They did not fly at the light. I touched one of these isolated bees. It immediately "stood on its hands" and moved sluggishly toward the cluster. A little later I called my wife down to look at a powerful colony which had become so uncomfortably warm near the ceiling that the



Bosserman's winter case is made of ¾-inch slabs of solid concrete bolted together at the corners. Wooden cleats are also bolted on for a hand grip. One case weighs from 65 to 80 lbs.

bees had come outside and clustered on the front of the hive up to the hand hole. I held the lantern up within two inches of the cluster. There was a slight movement among the bees, and one bee raised up and buzzed its wings a little. That was all. Not one bee left its place.

I will tell you why. We put in a hot-water plant last winter; and to lower the temperature of the cellar we found it necessary to open the inside cellar doors, leaving the outside ones shut. That gives us a temperature 8 degrees higher than it used to be before the plant was put in, and such abundant ventilation that the air is dryer.

My cellar is 30 x 30, and is partitioned off so that the bees are in a separate room. The floor is cement, and the bee apartment is plastered overhead. The temperature in winter was usually 42. Last winter, with a temperature of 46 below outside, it was 38 above inside.

If Ira Barber could rise from his grave and read these lines he would no doubt smile and exclaim, "I told you so."

Cadott, Wis.

## THREE DIFFERENT BEE-CELLARS COMPARED

### The Right and Wrong Way to Ventilate

BY E. S. MILLER

For a number of years I followed the advice to beginners to winter my bees outside, with resulting losses varying from 10 to 50 per cent of the colonies. Then I began to think that there must be a better way, and to hope that, before finishing, I might be able to work out a plan by which 100 per cent of all colonies might be carried through in good condition, providing, of course, they were in proper condition when placed in winter quarters.

Owing to the expense, labor, and uncertainty of results, packing in outer cases did not seem advisable.

About this time I bought another apiary and a few acres of land with a honey-house and a bee-cellar. But bees wintered in this cellar came through in a damp, moldy condition, and with a considerable percentage of loss.

Then a study was made of different modes of ventilation; and for the last five years my average loss in wintering has been about one per cent. There was a loss of only one colony in three winters in case of bees wintered in three cellars. During the past winter the loss was two colonies out of 274.

In order that the construction and mode of ventilation may be better understood I will attempt to describe briefly three cellars, and compare results.

Cellar No. 1 is under a building, and is 18 x 20 x 7½ ft. It is in clay loam, and is made of solid concrete with cement floor and a plastered ceiling which is even with the level ground outside.

A nearly horizontal sub-earth ventilator extends from a point 30 feet west and enters near the floor. A chimney extends from the cellar floor to a height of about 20 feet, with an opening near the floor. The stove in the room above is seldom used, and it is not necessary for the purpose of ventilation. Door and windows are double; but the floor of the honey-house above has not yet been made sufficiently warm; and the low temperature resulting therefrom accounts, I think, for the losses. Usually the current of incoming air through the sub-earth ventilator, and the current out through the chimney are sufficiently strong to extinguish the flame of a lighted candle or match. A good current is always present at the opening near the floor in the chimney in cold weather, whether the wind is blowing or not; also at inner end of tube except when the wind is from the east.

The following temperature readings were made with a tested thermometer, and are worthy of consideration:

| 1913 | Temp. Outside | Intake | Outlet | Wind | Draft at Intake |
|---|---|---|---|---|---|
| Feb. 19 | 54 | 46 | 45 | S. | Moderate |
| Feb. 22 | 26 | 32 | 44 | W. Strong | Strong |
| Feb. 24 | 12 | 32 | 40 | None | Light |
| Feb. 28 | 32 | 36 | 40 | None | Light |
| Mar. 2 | 2 | 18 | 39 | W. Strong | Strong |
| Mar. 5 | 34 | 37 | 43 | S. W. Mod. | Strong |
| Mar. 11 | 54 | 45 | 45 | S. E. | Out, light |
| Mar. 14 | 64 | 48 | 48 | S. E. | Out, light |
| Mar. 19 | 63 | 50 | 50 | S. E. Strong | Out |
| Mar. 21 | 24 | 35 | 46 | W. Strong | Strong |

On March 20 a small amount of moisture could be seen at the entrances of a few of the hives in the lower tier, due to a lower temperature near the floor. Repeated tests showed the average temperature at the floor to be approximately one degree lower than near the ceiling; and the temperature near the ceiling was the same as at the outlet. By comparing maximum and minimum temperatures it will be seen that, while the variation outside amounted to 62 degrees, that at the intake was 30 degrees, and the cellar variation was only 10 degrees. Note also the modification of temperature in passing through the intake when there was a strong west wind. The bees (March 20) are quiet, and apparently in excellent condition. The cellar is dry, and with no perceptible odor. Number of colonies, 1912-'13, 104; winter loss, two.

Cellar No. 2 is ventilated in a manner similar to No. 1, except that the intake is about 100 feet long. This cellar is of brick, and is built in sand under a dwelling-house. The bees occupy a room partitioned off 12 x 12 ft., 87 colonies being stacked up five or six hives high. This room is much too small. Nevertheless, the bees are in excellent condition—dry, no odor, few dead on the floor; average losses about one per cent. The current at the intake is apparently stronger than in cellar No. 1. No temperature readings were taken, but the cellar is warmer than No. 1. Losses, 1912, none.

Cellar No. 3, 14 x 20 x 8 ft., made of cement blocks, is in stiff clay. It has four vertical air-shafts outside, extending from the ground surface, and entering the bottom of the cellar; also a dozen 4 x 4-inch openings at each end near the ceiling, which extend up from two to six feet through the cement blocks, and open outside. There is also a trapdoor into the attic, 1½ x 3 ft., which is left open in moderate weather. The spaces between the joints above the plastered ceiling are filled with dry sawdust. This is an excellent example of how *not* to ventilate a bee-cellar, notwithstanding many contend that an opening at the top is all that is necessary. In this cellar no air-currents are perceptible at the opening, either at the top or bottom. The humidity is usually about 100 per cent—that is, the air is completely saturated with vapor. Although the temperature is considerably higher in cold weather than in No. 1, the air is stagnant, odor bad, bees restless, and bushels lie dead on the floor. The small winter losses of colonies I attribute to the excellent condition of the bees due to heavy fall flows of honey. A sub-earth ventilator and chimney will be installed before another winter. Colonies, 1912, 98; losses, none.

Now, what can be learned from these examples? It seems to me that the several winters that these cellars have been used prove conclusively, first, that proper ventilation is necessary in the successful wintering of bees. Second, that, unless there is a chimney, the difference between the temperatures within and without a bee-cellar is not sufficient to produce convection currents that will bring about a proper ventilation. Third, that either a high chimney or a nearly horizontal pipe, entering at the bottom of the cellar, that will take advantage of wind pressure, or both, are the most practical means of forcing the air through and keeping it pure and at the proper humidity.

The question may be asked, "Why not pass the air in at the top?" There are two reasons. The first is, that the underground inlet modifies the temperature by making the air warmer in cold weather and cooler in warm weather. The second is that, while in cold weather the cold air will drop to the bottom, being heavier, it will not do so when the air outside is warmer than that inside, and there will be little or no ventilation when most needed.

Valparaiso, Ind.

## COLONY OF BEES TAKEN FROM A TREE IN FEBRUARY

BY J. S. FURNER

I have a colony of bees that I got last February in the woods two miles from my home. They were found by some boys hunting rabbits. I investigated, and found that the top of a basswood had blown off to a distance of about 20 feet, and the bees were in it. I got a man, crosscut-saw, and a democrat wagon, and went after them. I sawed the log off 42 inches long, nailed boards on each end, covered the hole, loaded the bees in, and in the summer they went to work as lively as any colony that I have.

The log is 22 inches in diameter, with an

Section of a tree containing a colony of bees. The tree was cut in February.

Apiary of J. T. Kight, Southport, Ind.

opening inside ten inches across, throughout the length of the log. There is nice white comb clear from the bottom to the top. I have a notch at the bottom through which the bees go out and in.

Lima, N. Y.

## EARLY YIELD OF HONEY IN INDIANA GOOD

BY J. F. KIGHT

The spring and summer honey harvest is about to draw to a close (July 21). The yield has been very good in quantity and excellent in quality. Owing to about three weeks' drouth in June the white and alsike clovers were cut a little short; but while they did last, the bees carried in nectar with a rush. There seems to be considerable sweet-clover honey coming in now; but I can notice some falling off, as I have one good strong colony on a pair of scales, and the nightly balance is running only about 1½ lbs. daily, while it ran as high as 6½ lbs. during the palmy days of white and alsike clover in May and June.

As a rule the general honey crop in Indiana has been good this year, and in many localities there will be a flow of smartweed and aster honey this fall.

AN EXPERIENCE WITH AMERICAN FOUL BROOD.

I have had a little experience this year that was not on the program; and while I have always dreaded the thought of disease among bees I can now say that I am really glad that it happened, although it cost me several pounds of good honey and the loss of some very fine wired comb foundation. Yet I do not regret this loss, for from the experience gained early in May I discovered that American foul brood existed in two colonies, and I asked the State Entomologist to assist me in going through my apiary of about 30 colonies at that time. He kindly did so, and we found seven pronounced cases of American foul brood. Having read of the different methods of treatment which really ended with the same results, also having before me the printed instructions of the State Entomologist I proceeded to make a cleaning.

As mathematics is my long suit, and not having the desire for any more labor than was necessary, I commenced to figure just the best, surest, and safest way to exterminate the disease. As all authorities on this disease seem to agree upon getting the bees out of the diseased hive and into a new clean one with starters only in the frames, I decided that there ought to be a better, quicker, and more sanitary way than to shake them as is advised by most authorities. I decided to try the driven method, instead of the "shook" method, which, in the end, amounts to the same, only the driven method is quicker, sanitary, and safer.

Here it is: Place the prepared hive with the starters in the frames on top of the diseased hive after removing the top board quietly, and puff considerable smoke in the hive entrance of the diseased colony. At the same time use a little hammer, and the bees are so frightened that they make a rush for the top of the hive without stopping to gorge themselves with the infected honey. After the first attack, I use less smoke, but keep pretty busy with the hammer. Within ten minutes every bee that can crawl is in the upper hive.

Remove the diseased hive to a new stand and place the driven colony on the old stand; and after 24 hours give the bees either full sheets of wired foundation or empty combs, and the work is complete. If there is sealed brood enough to warrant, one should leave enough bees in the diseased hive to keep the unhatched brood warm. At the end of 21 days repeat the drive; and by giving them a laying queen this second or after-drive will build up into a good strong colony by fall.

Under the treatment described above, the cure has been perfect; and from the seven diseased colonies I now have ten good ones. With this treatment, too, one does not expose any combs or honey to the robber; has no lifting, shaking, nor brushing of bees, and it is quickly over. I regret the loss of some honey and combs, but do not dread American foul brood any more.

Southport, Ind.

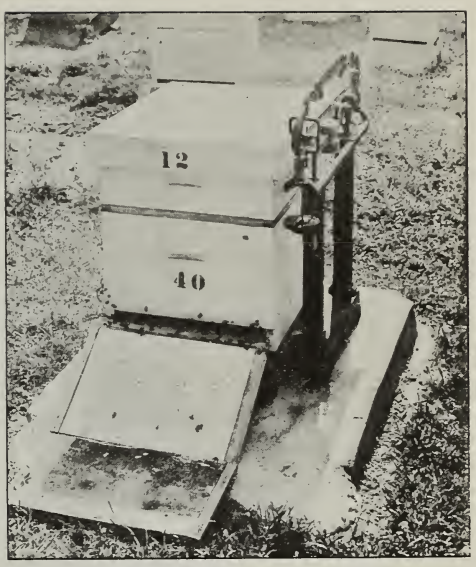
## CURING BEE PARALYSIS BY ALLOWING THE COLONY TO REAR A NEW QUEEN

### The Suspension of Brood-rearing Brings About the Cure

BY N. L. STAPLETON

I was very much interested in P. C. Chadwick's account, May 15, page 331, of his treatment of two paralytic colonies, and also in B. L. Fisher's account of the trouble he is having with his bees which I have just noticed, June 1, page 387. In my opinion there is no question but that Mr. Fisher's trouble is paralysis, and I think I can give Mr. Chadwick the secret of his success in the treatment he gave his diseased colonies.

I have never heard of any foul brood of any kind in Georgia; but bee paralysis is a constant source of trouble to all beekeepers in this section. Four years ago I introduced the first modern hives and the first Italian bees in this section of the State, and now have 95 colonies, consisting of both three-band and golden Italians. But before I started my apiary I used to notice among




Test hive on scales.

the farmers who used box hives, in practically every beeyard one or more colonies with a large number of dead bees in front, and disabled bees crawling around on the ground. The owner always explained that the bees had been robbing this colony, or that the web worms were killing it out. I still see the same thing over the country, and now know that the trouble is paralysis.

Soon after I began keeping bees, two of my strongest colonies developed this trouble, one of them being a colony which I had received by express together with a very fine queen, and I have had more or less of it in my yard every year until the present time. I read every thing I could find on the subject, and about all I found was summed up in the advice to requeen. I also wrote to J. J. Wilder, of Cordele, Ga., with whom I had been in college some years before, but he gave me the same advice. By experimenting I found that requeening would usually remedy the trouble; but twice it did not do so, and I had to requeen the second time in each of these cases in order to effect a cure. Here I desire to note two observations: The colonies affected have nearly always been my strongest ones, usually containing expensive queens which I hated to kill, and so far I have seen but two colonies recover without treatment; and these two which will be referred to had what amounted to the same thing—a suspension of brood-rearing.

The second spring after I entered the bee business I began experimenting, with a view to finding a simple treatment, and

have been at it ever since, but did not solve the problem until this season. Some writers have suggested that the old honey stored in the hive, and others that the old pollen in the hive, is responsible for the trouble, and that, so soon as new pollen and nectar are brought in, the trouble would abate. My observation does not sustain either of these theories. I have several times removed from the diseased colony all the honey and pollen in the hive, leaving only the center combs with the brood, and this, too, when a good supply of both nectar and pollen was being brought in. At other times I have fed sugar syrup. In no case has there been any perceptible improvement in the condition of the colony. Last season I attempted to introduce to a diseased colony a queen which I had received through the mail. The bees refused to accept her; and when I next opened the hive for the purpose of examination I found a lot of fine queen-cells. As a matter of experiment I took a couple of these cells and gave them to nuclei from healthy colonies, besides leaving one for the mother colony. They all mated; and not only did the mother colony recover completely, but there was never any trace of disease in the nuclei.

During the past winter, which was unusually warm, I had five colonies badly affected. In January I happened to open one of these and found a number of supersedure cells. This was so unusual that I watched this colony carefully. A queen hatched out in due time and remained in the hive for ten days or more; but a cold spell coming on, she eventually disappeared without ever laying. Soon afterward, when I went to introduce a queen to this colony, I noticed that it was entirely cured of paralysis, and I incidentally noticed that all brood had hatched out.

About the first of March we had a pretty fair honey-flow here from tupelo and other sources, and another of the diseased colonies swarmed, which was something else unusual, as I had never before seen a diseased colony build up sufficiently to cast a swarm, even in the best honey-flows. I attribute this instance to the warm winter. I hived the swarm and moved it to a new location, and in due course of time found a laying queen in the mother colony. Some three or four weeks later I was surprised to notice that there was no indication of paralysis in either the mother colony or the swarm. In trying to account for this, and in recalling some of the experimenting that I had done in the past, I came to the conclusion that the only thing that could account for such a prompt cure was the suspension of brood-rearing which had occurred in both the mother colony and the swarm.

As a matter of further experiment I then went to each of the three remaining diseased colonies, and, removing the queens, I introduced each of them to healthy colonies and allowed the diseased colonies to rear their own queens. The result was surprising in that the recovery of the diseased colonies was so prompt in all three cases. The old queens which were removed have had time to hatch out and mature a large amount of brood, and there is no indication of infection in any of the colonies to which they were given, which shows that the queens were not responsible for the trouble.

It is true that my investigations are not conclusive; but I am so sure that my conclusions are correct that I give them to the other members of the fraternity, especially those in the South, with request that they verify the same. I do not know just how long the colony should be without a laying queen in order to effect a cure, but apparently until all brood has been sealed, and the nurse bees have had time to get rid of all the food they have been preparing for the brood.

As above stated, in two cases in the past where I introduced queens received through the mails a cure was not effected until I again changed queens; and I attribute this to the fact that these queens must have begun laying before all of the old brood had been sealed. In no case where I have introduced a cell or allowed the colony to rear its own queen has it failed to effect a cure promptly.

I desire to say further that my observation is that it is not at all necessary to isolate the diseased colonies nor to remove them to a separate yard. In no case have I had colonies by the side of the affected colonies to become diseased. I have had my yard entirely well for two or three months at a time, as it is at present. I have never had the trouble occur the second time in the same colony, and have given combs of honey and pollen from diseased colonies to healthy colonies without ever having the healthy colony become infected.

Colquitt, Ga.

## HIVES PROTECTED IN WINTER BY BUILDING PAPER TACKED TO A FRAMEWORK

BY M. J. KAUFMANN

I herewith enclose a photograph showing a hive and covering. The outside cover is a light framework covered with building paper. I tore the front out to show better the hive inside. During the winter there is just

A light framework covered with building paper as a protection against the wind in winter. The paper is torn away in front to show the hive inside.

a small opening in the front, an inch or two below the main entrance. This gives the bees plenty of ventilation and keeps out the sunlight. The principal object of the outer cover is to break any winds (even chaff hives occasionally will leak wind), and I find it saves the hive considerably against snow and dampness. Of course, a man running two or three hundred hives would not find this advantageous; but for the small beekeeper the slight trouble that he would have making the framework covering it would more than compensate him for the protection given the hives.

New York.

## POSITION OF THE CLUSTER OF BEES WINTERED OUTDOORS

BY GEORGE SHIBER

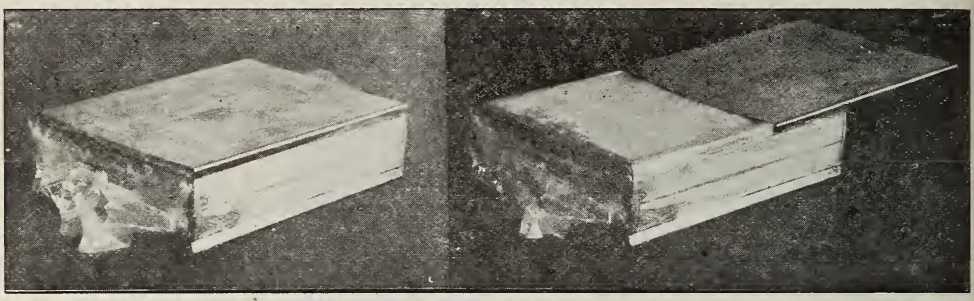
In Dr. Miller's fifth Straw, p. 108, Feb 15, he says: "While empty combs would be found below the cluster, the bees would never allow honey below the cluster." And, again, "But reasoning is not always safe." Even so. In the footnote, the editor says, "We feel very sure we have had many cases like this where the combs of honey project below the cluster."

Mr. Editor, you have got the decision. In winter, are not bees always right up to the top of the frames? and if a space is made above the frames and under the quilt, don't they always cover the top of the frames? I do not recall a case where they did not. I will tell you what I observed last February. The 19th and 20th of that month were very warm, and the bees flew as in summer, so I took the chance and opened many colonies. I found hive after hive with honey in the bottom part of the combs—not only one or two, but a lot of them. In case of a great many I did not take out a frame if I could see the combs on the outside of the cluster with sealed honey and the ends of the middle combs sealed.

One colony I opened and took out every comb. It had one of my choice queens. It was a magnificent stand of bees. Well, the four center combs had empty cells in the upper half, and sealed honey below. The two outside combs were still sealed solid—had not been touched. Yes, honey was below the cluster, for the bees were at the top of the frames. I opened a number of others that were in the same condition.

Yes, Dr. Miller, while I have a pretty warm feeling for you I shall have to take the editor's side of the argument, for you see I saw it, and it is still fresh in my mind. I have wintered a good many colonies in the cellar; and, so far as I have observed, your statement will hold true in regard to that mode of wintering—*i. e.*, that honey will never be found below the cluster, but it will be found below the cluster when bees are wintered out of doors. Or let me say it this way—I saw a number of such cases last February.

Randolph, N. Y.



Comb honey protected by a tin slide on each side of the section.

## TIN COVERS FOR SENDING HONEY BY PARCEL POST

BY W. J. LEWIS

As an experiment we are sending you under separate cover, by parcel post, two sections of honey enclosed in our tin covers. One of these sections, among forty others, was exhibited at the Gulf States Fair at Mobile last fall, and was from there taken to Chicago and exhibited at the land show. It was then sent back to Citronelle, and, with about twenty others, inclosed with the tins, was put in a trunk with other baggage and sent to this city. If it reaches you in good condition I think it will be a fair test of our tin covers for supporting a section of honey while being handled. The tins can be put on or removed more easily by clamping them sidewise over the section than to attempt to slide on endwise.

This honey was produced in an improved Danzenbaker hive. We use a galvanized iron strip to rest the frames on instead of the wide cleats, for both supers and brood-chamber. We think this makes an ideal hive, as there is an air-shaft at each end of the hive, also a highway or passage for the bees to go and come. We also swing the extracting-frames and section-holders from the center. Our special frames, both brood and extracting, have seven-eighths top and bottom bars. The section-holders have the same width of top and bottom bars so as to cover the sections entirely. We have used the new frame and holder for two years.

We shall produce about 3000 sections at our Alabama place this year. Our apiary in this city consists of about sixty colonies; the bee-yard is illuminated with electric lights, and the hives stand on cement stands. We produce extracted here.

One correspodent tells how the price of honey can be raised six or eight cents per pound by advertising. Of this we feel certain. We get from six to ten cents more per section for our honey than the regular price. Grocers will not handle other honey after once handling our product with its tin covers. Fancy honey ought to bring as much as fancy butter. We once thought the producers would some time get together, and, by advertising the merits and uses of honey, establish a better price; but we have about lost hope. Beekeepers are too widely separated for a concerted movement, and in the ranks are too many scientists and old fogies for united action.

St. Louis, Mo.

[The honey arrived in rather bad condition, the combs being cracked. However, we photographed one of the sections to show the protecting slide, an engraving of which appears herewith.—Ed.]

## SHAKING COMBS OF A DISEASED COLONY

### Reducing a Foul-broody Colony to a Few Combs which can be Shaken Quickly when the Treatment is Given

BY R. F. HOLTERMANN

It appears to me, unless my memory fails me, that in the many methods given for the treatment for foul brood (and if any do give it), little emphasis has been given to the best method of shaking bees from foul-broody colonies.

The object in shaking bees twice is to minimize the possibility that, at the close of the treatment, the bees may have any disease germs in the hive. The line of reasoning is that the bees are liable to fill their honey-sacs the first time they are shaken; that some diseased honey may be in the bees after the first cells in comb have been produced, and that they may have stored this honey in the comb where it is likely it will be fed to brood. Therefore another shake is given. Now, it might so happen that the operation may be repeated by the bees the second time; but the ratio of risk is reduced just to the extent that the amount

of diseased honey in the hive has been reduced.

Now, I am not going to pose as an expert in foul-brood matters, for I do not believe I ever had more than five colonies with the disease at one time in an apiary. I think I have had that; but I am very much afraid of it, and extremely anxious not to become any more familiar with it from a practical standpoint. In order not to be a menace to others, as well as not to spread it in my own apiary, I have read all that I thought worth reading about it, and have thought a good deal upon the subject.

The danger comes from the infected honey the bees take up and carry in their honey-sacs. Why, then, not do all one can to prevent them from getting any of this honey? Some combs, owing to propolis, and on account of the way they are built into the frames, and even attached to the sides of the hives, are so difficult to remove that the bees might almost get full honey-sacs before they are separated from their stores. Almost any hive, however, can be made more convenient for action. Where the colony does not occupy all the combs in the hive, all surplus combs can be removed—in fact, all that have no brood in them, or perhaps even more. The two outside combs can in any case be removed, and then when the bees do not expect it the beekeeper can go there with what help he can muster, smoke the bees if at all cross, or give little or no smoke if they are gentle (but better smoke the bees than work slowly). The combs can be seized quickly, the bees shaken off by every operator, and in that way the danger of transmission of the disease be overcome because the bees get little or no chance to fill themselves.

I am still a strong advocate of brimstoning the bees if there are only one or two diseased in a large apiary. This is not necessary; but I always feel that it is a safe way, and I am no stranger to that method of treatment, and under such circumstances I am in favor of burning the comb.

Brantford, Canada.

## BEEKEEPING ON HILLCREST FRUIT FARM

BY S. H. BURTON

As bees are considered a necessary adjunct to a fruit-farm for the proper pollination of bloom, my first investment as soon as my berry plants and trees began to bloom was five colonies of bees. The bees were in eight-frame dovetailed hives, and were knocked down to me at a public sale at $2.00 per stand.

They were purchased in October; and as the honey-flow was practically over I at once moved them to my farm and prepared them for winter by removing the sections and filling the supers with leaves and chaff, first spreading a cloth over the brood-frames to prevent the packing from going down between the frames into the brood-chamber.

One colony was lost on account of being queenless. The other four wintered finely in an open shed with outside packing. These four colonies have never swarmed, although I have owned them for three years. However, this little experience gave me the "bee fever," and I have since built up my apiary by purchase, swarms, and increase, till now I have 24 colonies.

Up to July 1 the honey crop was immense, some colonies filling a super in ten days. The extended drouth for the past two months has shut off all sources of supply, and it now looks as though I might have to feed in order to winter through safely. Buckwheat was sown the middle of July, but it has been so dry that a great deal of the seed has never sprouted. However, a beeman is hard to down, so I still live in hopes of better luck ahead.

Having read about requeening and introducing, I decided to try my hand at introducing new blood into our apiary, and also see what I could do in the way of making artificial increase. Two queens were ordered, and the directions for introducing to a queenless colony were followed. The cage was slipped down between the frames, and was left 24 hours. Upon examination it was found that the bees had not released the queen, so she was turned loose, and ran down between the frames. The next day an inspection was made, and no queen was to be found.

With the second queen I had better success. Artificial increase was tried here; and instead of introducing the queen to the bees I did just the reverse—introduced the bees to the queen. A frame of honey was removed from a hive, and only about three dozen bees with it. This was placed in an empty hive with the rest of the frames containing full sheets of foundation. The entrance was closed, and left for two days. Then the cover was removed; and my queen, whose wings had been clipped, released. I then went to a strong colony having a full super of honey, and removed the super, bees and all, and placed on my hive containing the new queen. I left the entrance closed until the next morning. In 24 hours after opening the entrance those bees were carrying in pollen, and every thing was as orderly as could be. This, too, was during a drouth, and no robbing.

Washington, Ind.

A. P. Haberecht and family in their apiary in New South Wales, Australia.

## BEEKEEPING IN NEW SOUTH WALES

BY A. P. HABERECHT

The conditions in the United States are altogether different from ours in the southern Revernia of New South Wales. Our average rainfall is 22 inches per annum. The coldest morning I can remember was 26 degrees F., and the warmest day 118 in the shade. Our produce is chiefly wheat and wool.

I am a builder by trade, and keep a few bees as a hobby as well as for profit. I have at present 70 colonies of bees, a few golden Italians, a few blacks, but mostly hybrids. The golden Italians I procured from H. L. Jones, Queensland. The queens which I raise myself go back in color every year; but as for honey-gatherers there seems to be no difference.

I am sending a picture of my apiary and honey-eaters. I have most of my bees in ten-frame Langstroth hives from one to three stories. I sell all my honey (extracted) in 60-lb. cans at the apiary. There is no sale for comb honey. I keep only one hive going with sections for my own use. I have exhibited extracted honey for six years, and have not yet been beaten. My locality is all right for quality, but no good for quantity. The best average I had for one season was 120 lbs. per colony; but the average for the last ten years would be about 30 lbs. per colony. I always leave about 30 lbs. of fall honey per colony, which has always been sufficient to see the bees through the winter, and to rear their brood.

The winter here lasts about three months (May, June, July); but on any calm and sunny day, even in the midst of winter, the bees will fly. About the first of September they will begin to gather pollen from capeweed, and swarm about the middle of October. Our honey is gathered chiefly from eucalyptus trees, which begin to bloom in September. Our locality has three species—the first one and the best, the yellow box (*Eucalyptus melliodora* A. Cum), then the red gum (*Eucalyptus rostrata* Schlecht), and, lastly, the gray box (*Eucalyptus hemiphlora*), which gives us our fall honey, and is dark in color, and granulates quickly. The yellow box and red gum honey seldom granulate. Some of it never granulates. I have had samples since 1898, and they are just as I put them aside.

So far I have had only one case of foul brood. I at once sulphured the bees and burned the whole of the brood-nest with the bees, and I have never had any since. I kept bees in box hives about 20 years ago, on the Wimmera River, in Victoria, and lost 53 colonies out of 57 in a few weeks with foul brood.

In 1902, if I remember rightly, I lost in this locality 45 colonies out of 53 from what was called the "disappearing trick." Since that time I have not seen it.

Some seasons I have a good deal of spring dwindling, and sometimes a little paralysis; but the latter is not contagious here.

If any of your readers would care to exchange samples of honey I should be pleased to do so. I read some time ago that our eucalyptus trees are grown in some parts of America. I am sure they should flourish on your soils. Red-gum plantations should prove very profitable in America in the long run.

With reference to railway freight on honey in New South Wales, I interviewed the station master here, and he tells me he knows nothing about changing from B to A rate. His book says honey goes as B rate, minimum on ton (no difference in freight on comb or extracted honey); 50 miles, 10 shillings per ton; 100 miles, 18-10; 200 miles, £1-13-5; 300 miles, £2-3-10; 500 miles, £2-16-4; and 600 miles, £3-2-7.

### NUMBERING OF HIVES.

The numbering of hives on their stands seems ridiculous. In the first place, one would want to have a number on every side

of the hive or else he would have to go to the side of the hive where the number is.

My arrangement is this: Ten hives in a row, always counting from left to right; and ten rows in each section (that is, 100 hives). I certainly have every hive numbered in my book; but in the apiary the position gives me the number at a glance, wherever I may be at the time. For example, a swarm is issuing from a hive, say the fifth in the fifth row, which must be 45; the brick on top of the hives gives me all the particulars I want as to the condition of the queen and hive, so I know every thing in a few seconds without moving one yard. I have had this arrangement ever since I began using frame hives. I have my hives on four pegs about 12 inches from the ground, and have them placed 10 feet by 20 feet, and a row of fruit-trees between, as you will see by the post card.

Henty, N. S. W., Australia.

## IS SUGAR A WHOLESOME FOOD FOR BEES?

BY J. A. HEBERLE, B. S.

Practical beekeepers have always sounded a note of caution against feeding too much sugar. Of course the warning was not against feeding sugar for winter stores in a poor honey year, nor is there any harm in feeding a few pounds of sugar to each colony. I feed every year in September about four pounds of sugar to each colony at an apiary where the bees gather a little heather honey, and my bees always winter well.

The sugar is usually boiled. This was formerly done because ultramarine was used to make sugar appear whiter. By boiling, the ultramarine came on top and was skimmed off. I have no convenient place to boil the sugar. I use cold water to make the syrup—equal parts by measure of well-refined crystallized sugar and water. If it is late in the season, then a more concentrated syrup is used, as much as 7 parts of sugar to 4 parts of water by volume to this syrup. Hot water is needed to facilitate the solution.

Honey from honey-dew is not suitable for winter stores. Some of this capped honey should be taken out, and sufficient sugar fed or suitable honey given so the bees, while compelled to remain in the hive, can feed on the good honey or sugar. Honey from honey-dew invariably gives dysentery, and very often such a colony in our long severe winters is lost, or so weakened that it is scarcely worth the trouble. I recommend in poor seasons to take in early fall some capped honey from each colony. Feed sugar instead, and give the capped honey in the spring as needed.

In our rough spring weather it is dangerous to supply feed in fluid form too early in spring. It entices the bees to fly out for water and pollen, and a large per cent never reach home again. If the lacking food is supplied with capped honey-combs the bees are not so excited nor so much stimulated, and at the beginning of the honey-flow are usually more populous, and consequently bring more surplus. Colonies not stimulated seem to conserve their energies, and use them later to better advantage. Stimulating in the latter part of spring when the inconstant weather has lost part of its danger may be advantageous. Great care, however, must always be exercised when stimulative feeding in spring is practiced. The warning against sugar feeding was for those beekeepers who take all the honey they can from the bees and feed sugar. These mercenary beekeepers think they are profiting by this robbing system, but they are mistaken. They have considerable work, and but little gain. They do harm to their bees and lessen the chance for a good crop of honey next season, because the colonies so robbed do not prosper as well in spring on the sugar, and can not make use of the early honey-flow to the same advantage as the more populous colonies that had plenty of honey during brood-rearing time.

Dr. U. Kramer, of Zurich, wrote an interesting article on "The Physiological Effect of Sugar-feeding." By analysis it was determined that sugar honey (*i. e.*, sugar fed to the bees and extracted) contained practically as much nitrogen as honey. Of course, the ethereal oils and other subtile substances peculiar to honey are not present, and the inversion is not complete. Sugar honey from the uncapped cells showed 0.28 per cent of nitrogen; the capped sugar honey showed 0.36 per cent of nitrogen. Sugar is a hydro-carbon, and contains no nitrogen. Dr. Kramer deduces, therefore, that the bees supply albumen from their body while inverting the sugar. If that is so, there can be no question but that feeding great quantities of sugar must be harmful to the bees. It must weaken their vitality and make them more susceptible to disease.

### HOW LONGEVITY IS INFLUENCED.

To lessen the vitality means to shorten their life, while longevity of the bee is the secret of success in beekeeping. It should be the ideal of the beekeeper to produce by careful selection bees that have *great vitality*. Such bees resist diseases better, and bring the most surplus. During spring the

brood-nest can be increased only in proportion to the bees present in the colony. If the bees of a colony during the busy season live seven weeks instead of six, that colony will become populous providing the queen lays an equal number of eggs sooner than the colony whose bees live only six weeks, and would bring in much more surplus. By selection bees have been produced, not only of splendid color, but also of great fertility. Great fertility alone does not mean great surplus unless the offspring have great vitality.

Longevity is a consummation devoutly to be wished. If the beekeepers, especially the breeders, strive to produce queens whose progeny are especially hardy they will succeed, just as they have succeeded with fine color and great fertility. The trouble is to know the queen whose progeny is especially hardy. If beekeepers once decide to pay especial attention to longevity they will find ways that will permit them approximately to judge of this desirable quality. If a colony has a very fertile queen, and is populous, yet does not bring in surplus correspondingly, one may infer that the fielders are not in the right proportion to the nurses. Unless there are other conditions that account for the deficiency, that would mean that the fielders do not live long enough. On account of the fertility of the queen, the colony is always populous, consumes great quantities of honey to feed the larvæ, but, having fewer fielders than a colony whose queen is equally prolific, but whose descendants live longer, is short in surplus.

By comparison of two colonies of about equally fertile queens but great difference in vitality, the colony of greater vitality would be more populous mornings and evenings. A colony that does not seem very populous during the day, and the fertility of the queen only medium, but whose surplus compares favorably with the best, that will be a colony whose bees probably have that longevity that the up-to-date beekeeper should wish. We know in a general way that bees during the busy season live about six weeks, while bees hatched in August or September live about eight months.

To accomplish much by selection in a short time, it is essential to select carefully the colonies from which queens are reared. Equal attention should be paid to the selection of colonies whose drones are to make the queens. A choice colony, only the best is good enough, should be set up in a place far away from any apiary and from the woods where wild bees are—say one mile (a greater distance would be preferable), and the queens to be mated should be brought there. The colony should have opportunity to rear a great number of drones; and if the honey-flow is meager, liquid honey mixed with an equal volume of water should be fed for the purpose of stimulation. Under such conditions a high percentage of queens would be mated pure, and transmit to their progeny with much greater certainty the good qualities of both parents. We may often note that some colonies are much quicker in detecting distant sources of nectar. This is also a quality that deserves the special attention of the breeder.

I have noticed that some beekeepers in America advise feeding only cane sugar, claiming that beet sugar is not wholesome for bees. I think this warning is not justified. All sugar we use on the table is cane sugar—that is its proper chemical name, regardless of its derivation—and is in all cases just the same, be it from the sugar-beet, sorghum, sugar-cane, or the maple tree. In good or *well-refined* sugar there is barely enough of other substances so that its derivation may be determined by the most delicate and refined methods of modern science; but the ordinary mortal can find no difference.

In Germany we use sugar from the sugar-beet exclusively. I have never heard of a case where any undesirable effects had been noticed by feeding to bees well-refined sugar from the sugar-beet. The tendency of degeneration of the bees through feeding large quantites of sugar will be the same whether the sugar is derived from the sugar-beet or the sugar-cane. Alcohol is the same, whether it be from corn, barley, or potatoes. This article applies especially to conditions prevailing here in Bavaria.

Markt Oberdorf, Bavaria, Germany.

## THE "MOVIES" AND BEEKEEPING

BY LOUIS SCHOLL

*Continued from page 709.*

for advertising the beekeepers' products carried out.

Of course, I do not mean to say that such a film should be straight-out advertising in its make-up, but that the scenes would be interesting moving-picture-show stuff, and so interesting that they will attract attention. Then, indirectly, the advertising feature of these pictures should come out of strong suggestions incorporated in various ways throughout the film. The titles to the different scenes should be suggestive as well as explanatory, and the pictures should be such as to create the desire that we are after. For instance, if the matter of honey can be kept uppermost in the minds of the

spectators by showing the honey in its various shapes and forms, perhaps best in the combs as they are handled from the hive, etc., honey handled in the store, a person purchasing or admiring a package of the clear liquid honey, or the pure white comb honey, and shelves of honey in nice glass, as well as exhibits at fairs, with large pyramids of honey in glass, or great piles of it in the comb, would help out. But better still, it seems to me, would be such pictures as actually show the honey being used and eaten at the table, with nice brown biscuit or hot cakes, or somebody giving nice bits of white comb honey to some rosy-cheeked children in place of pieces of candy. Honey could be displayed in many other interesting as well as suggestive ways.

It is true that not every detail need actually be shown in a picture film to place before the spectators a whole story about honey and the value of good honey. Just as one goes to see a great play, either in a theater or a reproduction of it in a moving-picture show, because he has read a book of the story of the play, so a complete picture story of honey production and honey for food could be given which would create, at the same time, a demand for this product.

## FIELD NOTES FROM MINNESOTA

BY J. ALF. HOLMBERG
*Apiary Inspector*

The results of the treatment of bee diseases throughout the State have been very gratifying this year, and it looks to me now as though we were the masters of the situation so far as a cure is concerned. I am pleased to say that I have not been able to find any European foul brood this season, and we can keep it so if we can have the co-operation of every beekeeper. I have found several places that were stricken with sac brood. The Bureau of Entomology at Washington does not advise treating this disease; but where there are not too many colonies I think it a good thing. In one instance I treated a colony where sac brood existed, and it produced 75 lbs. of honey the same season.

So much has been said and written on foul brood that I hardly deem it worth while to enter into a description of this disease in this writing; I shall, however, endeavor to state in my annual report every thing of importance regarding this disease.

Allow me to say that I will advise that no chances be taken at all if one desires the quickest way out. This seems to be the greatest difficulty among so many beekeepers that have affected apiaries, and if they would just try to keep every thing clean after treating, it would mean more to the bee industry than I could mention at this time. On one occasion where I inspected an apiary I found some hives with American foul brood. The owner helping me in this work wore gloves. When the work was completed in this yard we were to inspect another yard of his close by. We went there; and if I had not stopped him he would have used the same gloves and tools without disinfecting them. I afterward found out that he had done this before, and, of course, had spread the disease himself. This, of course, was carelessness on his part; and so many seem to think this is such a small matter that it doesn't count; but when a person is dealing with a contagious disease he can not be too careful.

In hiving stray swarms, unless one is positive that they are from healthy colonies, I advise putting on empty frames or starters. Later, these can be replaced with full sheets of foundation. By doing this the bees will use the honey they had with them for the secretion of wax.

St. Paul, Minn.

### Screen for Keeping Mice from a Hive

I had a couple of hives into which mice had found their way. They did a whole lot of damage to the bees before I could find out what the trouble was. Whenever one sees at the entrance an unusual amount of bitten-up bees and larger pieces of comb, wax, or wax mixed with packings, he may surely make up his mind that there is something wrong inside the hive.

If the weather permits, and the bees are flying, open the hive, and a mouse or something else will be found in the hive. Unless one is careful to catch the mouse it will hide between the frames. If the weather is too cold, and the bees are not flying, one may catch the mouse with a small trap on the outside of the entrance.

To avoid all this trouble, the very best thing I have found is to use a strip of screen (quarter-inch mesh), and fit that in front of the entrance. That will not interfere with the bees going out and in, and will keep out the mice. I get pieces of screen (scrap) at a carpenter's shop or hardware store. I cut them about 3 inches wide, and the length of the entrance of the hive, and bend them at a right angle so they look like a small trough. Then I lay them in front of the entrance. The one side will lie down flat on the bottom-board, and the other side stands up right against the entrance.

The Dalles, Ore., Jan. 11. JOHN PASHEK.

### Another Successful Introduction by the Smoke Plan

I want to tell of my success in smoking in queens. I have used the plan advocated by A. C. Miller, with good success. I had two colonies that were queenless for two months. I tried to introduce queens by the cage method but failed. Then I ordered two more queens, and this time I followed Mr. Miller's plan, and I succeeded. The next day after introducing the queens I found they were laying. It is certainly a time-saving method, and I prefer it to the cage plan.

Sugarcreek, Ohio., Aug. 30. D. W. MILLER.

# Heads of Grain from Different Fields

## Bees Essential to Fruit-growing; How many Colonies to a Given Number of Trees

We are novices as yet about bees and their care. We know, however, that the bee is an important factor in orchards, and because of such we contemplate making a very important incidental department of bees in our industry at Grand Isle, Vt. We can buy plenty of bees about here. I suppose they are common bees. Some say "black bees." Our notion is to start with enough swarms next spring to serve our 15 acres of old large trees and to let them multiply as fast as they will in contemplation of the 10,000 young trees set in 1912-'13. We will have about 150 acres of orchard, and our present notion is that a sufficient number of bees should be stationed near every section of the orchard so that in case of cold or rainy weather they need not work far. I don't know the number of colonies necessary for 10,000 young apple, plum, pear, and cherry trees, nor do I know how many swarms will secure their honey from a given center or quarters; or in other words, the territory or zone necessary per 100 colonies of bees at other times than blossoming time of fruit trees.

EASTERN FRUIT AND NUT ORCHARD CO.,
CLARENCE J. FERGUSON, Manager.
Burlington, Vt., Sept. 9.

[We refer you to GLEANINGS, August 15th issue, p. 562. You will see there that the Repp Bros., who are large growers of fruit, especially apples, regard the presence of bees as very important. We have one large orchard about ten miles north of us, 40 acres, and the grower there requested us to put upon the place some fifty or sixty colonies of bees. He secured a very fine crop of 16,000 bushels of apples, and when we saw him a few days ago, he said he attributed a good deal of this to the presence of large numbers of bees. He stated that he would want something like a hundred colonies of bees next year, as he expected to have one or two more orchards in the vicinity. We also refer you to GLEANINGS for July 15, p. 478, for a remarkable testimony on the value of bees as pollinators. See also our booklet, "Bees and Fruit." You will find much more matter on this same subject in the A B C and X Y Z of Bee Culture under head of Fruit Blossoms, and also under Pollen.

Just how many bees may be necessary for a given number of trees, we are not able to give you definite information; but our neighbor ten miles north of us thought that he would need about forty or fifty colonines for 40 acres of apple trees. Your plan is correct, to start a small apiary to take care of your 15 acres of old trees, and then increase the number gradually up to take care of the ten thousand young trees that you set in 1912.

You will find that the bee business is a profitable side line in connection with your fruit-growing because you will be the busiest with your bees just at a time when the work with the fruit trees will be at the least. During the cold weather and early spring the trees will need to be pruned and sprayed, and at that time the bees require very little attention. When the main honey crop comes on, say in the months of July and August, or rather the months of June and July, you will not need to be very busy with your trees, and consequently can give your whole attention to the bees. To our notion a combination of bees and fruit-growing is most excellent.

In putting bees in an orchard, it is desirable to scatter them, a few colonies here and a few colonies there. The idea is to get the bees arranged so they do not have to fly very far on cool or rainy days. Bees will go a short distance, and when they strike the cold air will go back to their hives, and for that reason it is desirable to have the colonies pretty well scattered throughout the orchard. This makes a great deal of travel for the apiarist between the hives, but at the same time you get a much better distribution of the work of the bees.—ED.]

## How to Winter Three-frame Nuclei, and Carry Over a Surplus of Queens

Can you tell me of any method that is fairly reliable for wintering nuclei of two to three frames in the cellar?

Chaffee, N. Y., Sept. 18. A. J. O'DELL.

[It will be perfectly practicable for you to winter three-frame nuclei in a cellar, providing you have the right conditions. The temperature must not go below 40 degrees nor much above 50. The bees will stand 60 degrees providing you have a large amount of ventilation. The cellar must be absolutely dark, and it should be reasonably dry. If the temperature hovers around about 38 and 40, 41 and 42, and is damp, you will probably lose a large part of the bees in these nucleus boxes. If, however, you can keep the temperature at about 45 to 50, with a dry atmosphere and a large amount of ventilation, without bringing in light, you will get fairly good results in wintering. Put these nuclei as close together as possible, to conserve heat. You will need to watch the temperature very carefully. It might be wise to put in the cellar a small drum stove, the smallest one you can. Connect it with a chimney; and when the temperature goes below 45, build a very little fire. This will change the air somewhat, and at the same time bring up the temperature and keep the bees quiet. If your cellar is such that it goes up to 60 degrees, and you can't hold it down, the bees will fly out on the cellar bottom and you will lose a large number of them, possibly all of them, in that way. The only thing to do is to ventilate, leave the cellar door open at night, and close it during the day. It is desirable, however, to have fresh air going into the cellar *all the time, if possible.* If, however, you can maintain a temperature of about 45 to 50 without very much variation, you will not need a great deal of ventilation, although we always think it advisable to have the cellar dry with plenty of air if possible. If you could have an arrangement whereby you could put the bees in a room by themselves, with an opening that will communicate with one or two other rooms under the building, it will make the ventilation very much better. It is not possible to winter a large number of bees in a small room unless there is a large amount of ventilation. We can not emphasize that point too strongly.—ED.]

## Does a Taste for Honey Have to be Acquired?

*Mr. Root:*—In your issue for Sept. 15, page 639, you have a short article headed "Honey a Concentrated Food." etc. On page 637 is an article by Doolittle, who says little honey would be eaten if it were not for its flavor, as the same amount of nutriment could be more cheaply obtained by buying sugar and making a syrup. I believe the taste for honey has to be acquired; and if Doolittle is correct, sugar syrup or a good maple-sugar syrup is fully as desirable, and far less trouble.

C. V. S. REMINGTON.

Fall River, Mass., Sept. 17.

[We can not quite agree with you that a taste for honey has to be acquired. If that were a fact, there would be very little honey consumed. This is true, however: Flavors that we enjoyed in childhood we continue to enjoy during our lifetime. We have noticed this, that persons who have been brought up in York State, who are familiar with the flavor of buckwheat honey, usually like it, even after they have come up to middle life and past. Those who

have been brought up in the one or two localities where maple syrup is produced are very fond of that flavor because they were used to it in childhood. Those who are accustomed to the flavor of clover honey, of basswood honey, or of alfalfa, continue to like those flavors. A really good table honey, like clover, basswood, or alfalfa, or even mountain sage, will create its own demand. In other words, the consuming public does not have to be educated to like them. It is a case of love at first sight.—ED.]

## Should Foundation in Sections be Placed with the Parallel Sides of the Cells Horizontal or Vertical?

I should like to make a few remarks in regard to the cover picture of the July 1st issue. There is a fault in all foundation that is made for oblong or deep sections which should be remedied. It should hang from the top of the section the way it comes from the mill, not crosswise. Notice the waves on every section. There would be none of these if foundation were hung the other way. There would also be less sag.

Then, too, foundation would not drop so easily when hauled over the road. But the most important point is that the honey has a much nicer appearance. Just compare two sections, one of each way, and see. Who put Nos. 10, 12, 13, 15, and 16 upside down when they took the picture? Notice the reverse position of the curves.

I have used 800 supers with wire fences and beeway sections for three seasons, and the per cent of burr-combs is small.

East Syracuse, N. Y., Sept. 20. F. W. LESSER.

[Some years ago we made a series of experiments with the comb foundation in sections, placed both ways—that is, a part of the sections contained starters in which two parallel sides of the cells were vertical and the rest of the sections contained foundation having two parallel sides horizontal. At the time, we could see very little difference in regard to the amount of sag. Furthermore, beekeepers disagree in their opinions in regard to the matter. Some cut their starters one way of the sheet, and others the other way. Before going further we should add at this point that natural comb is usually built with two parallel sides of the cell vertical, but occasionally the bees build the comb the other way.

It is practically impossible to make a foundation-mill with the cells cut in such a way that two parallel walls of the cell will be parallel to the long edge of the sheet as it runs through the mill. In other words, two parallel sides must be crosswise of the sheet as it runs through the mill—that is, parallel with the rolls of the mill. When making brood foundation it is customary to have the sheet of wax as wide as the brood-frame is deep, and then after running through the mill the wax is cut into lengths corresponding to the length of the brood-frames or a little less. With this manner of cutting, two parallel walls of the cells are vertical, corresponding to most natural-built comb. The super foundation, on the other hand, while run through the mill in the same way, is almost always cut just the opposite; that is, with two parallel sides of the cells horizontal. The reason for this is that it is more convenient to cut it in this way, although, of course, the beekeeper *may* cut it the other way if he prefers. The foundation in the sections shown in the cover picture of the July 1st issue happened to have been cut with two parallel sides vertical, as in case of brood foundation, whereas the customary plan is to have foundation cut the other way, which is in accordance with our correspondent's idea, if we understand him correctly. We formerly cut starters for oblong sections with two parallel sides vertical, the same as shown in the cover picture referred to; but something over a year ago we began cutting starters for the oblong sections the other way, just as in the case of square sections.

In this connection we should like to inquire whether any one else has done any experimenting along this line—that is, with foundation hanging both ways in sections. If so, we should like to hear the results. To be conclusive, the tests should be made under like circumstances and conditions so far as possible.

Our correspondent has an observing eye. The sections shown in the cover picture of the July 1st issue were piled up on the table. On account of the fact that they were not quite square a few of them had to be turned upside down to make the rows straight. This accounts for Nos. 10, 12, 13, 15, and 16 being upside down.

We are glad to have the good report of wire fences. Mr. Vernon Burt has secured some of the nicest comb honey this year that we have ever seen, with this same sort of equipment. Apparently the danger of bees attaching the combs to the wire is not as great as was first feared.—ED.]

## Should Supers Containing Brood be Removed in the Fall?

Last spring I purchased four colonies of bees. Colony No. 1 filled two supers with fine white-clover honey; but the last super they have filled with brood and young bees. Shall I leave the super on through the winter or not? If left on, what will be the result next spring? Do you advise using two brood-chambers for strong colonies? Colonies 2, 3, and 4 have the supers about half full of honey, and the brood-chamber full of brood and honey. If I remove the supers, will the brood-chamber have enough supplies to carry the bees through the winter? or will it be best to leave the supers with honey in them on through the winter? I am using Langstroth ten-frame hives. When the frames in the brood-chamber have honey and young bees, can the frames be put in an extractor and the honey be extracted without injury to the young brood, and then replace the frames to give more room for the queen to lay eggs?

Port Gibson, Miss., Sept. 8. B. F. MINNIS.

[It would be questionable practice to attempt to remove this super containing brood, at this time, as you will seriously weaken the colony and take away young bees which you will need next spring to keep up the strength of the colony. Under the circumstances the colony may be wintered in the story-and-a-half brood-chamber. While the weather is still fairly warm, perhaps it would be well to locate this super on the bottom-board and put the full-depth brood-chamber on top. Some time in the early spring, before the queen has started very much brood, you can remove this super from under the brood-chamber, thus getting the queen and bees on one set of brood-combs again.

We can hardly say from the description you give whether the brood-combs will contain enough honey. About the only way is to make an examination to see that all combs contain some honey; and the outside combs should be nearly solid with honey, perhaps two combs on each side. If there is not this much in the hive, feed a thick syrup in October, made by mixing two parts of granulated sugar to one of water until there are enough stores.

You can extract honey from combs containing sealed brood; but if there is any young unsealed brood this will all be thrown out with the honey. Therefore no attempt should be made to extract from combs containing unsealed brood.—ED.]

## Shipping Extracted Honey by Parcel Post

I have just read Dr. Moody's article, Sept. 15, p. 653, and should like to mention a few facts pertaining thereto. I am a clerk in the parcel-post department of the Cincinnati postoffice, also a beekeeper on a limited scale (having but 14 colonies), and am naturally in a position to observe a great many things as regards shipping the endless variety

of merchandise from practically every section of the country.

About two weeks ago two 10-lb. pails of extracted honey, which had been shipped from a small town in Kentucky to a party in this city, were received in our local office, in a deplorable condition. Each can, of the friction-top variety, was securely fastened in a sort of substantial wooden framework, but packed in such a way as to leave the rims of the cans extending beyond. In transit both had evidently received a blow or jar on the rim, causing same to spring just a trifle, but sufficient however to cause an almost invisible gap between the cover and the rim proper, resulting in about half the contents of the cans leaking out and completely daubing up every piece of mail in that particular sack. The public in general does not realize the hard jolts these mail-sacks receive in being transferrred from one train to another, and in being loaded on and off the mail-wagons.

Only a few days ago several pounds of grapes packed in a flimsy pasteboard box were received in a state of "mush," the package having been flattened completely.

A 5-lb. can of fine country butter received the same treatment. When a 20-lb. piece of machinery comes in violent contact with a fragile article or package, something is going to happen.

In order to ship honey safely by parcel post it is necessary to enclose it in a stout wooden box with plenty of packing to take up the jar. Our parcel-post service is being constantly improved; it being still in its infancy, too much can not be expected at the start; but in due time the many problems will be worked out, and fragile articles shipped with perfect safety.

Cincinnati, Ohio, Sept. 18. ALBIN PLATZ.

## Why Swarms do not Carry Foul Brood

In a footnote in Stray Straws, p. 633, Sept. 15, you say that "it is generally understood that swarms do not carry foul brood." Please tell us why; or how it is possible for them to do otherwise than carry it when they leave the parent hive loaded with infected honey? I once had an infected colony swarm, and I hived them on full sheets of foundation; placed it on the old stand, put on a queen-excluder, and placed the partly filled super of extracting-combs from the parent colony over it. By so doing I gave them a place to store their loads of infected honey; and as nectar was coming in freely this honey was soon covered up; and later, when it was well capped, I removed it with an escape-board and extracted it and melted up the combs. The swarm has never shown any sign of foul brood since. I felt certain that I had saved them from it only by giving them empty combs above the excluder. I imagine my prime swarm would soon draw out the foundation sufficiently to store some of the honey brought with them. It seems to me like taking a big chance. We should like to know more about the subject from some of you fellows who probably are in a position to "put us right." J. E. BATTRAM.

St. Thomas, Ont., Can., Sept. 22.

[Bees shaken from a diseased hive into a clean hive on frames of foundation will not carry the disease with them, as a rule. They will consume what honey they may have in their honey-sacs in drawing out of the foundation. However, to be doubly sure, Mr. McEvoy advised the use of two sets of foundation and a second shaking. This is a great deal of work, and it is very rare indeed that a second shaking is ever necessary; that is to say, one drawing-out of foundation seems to suffice for all practical purposes. This plan, which is so generally in use all over the United States and Canada, and to a great extent in Europe, is really founded on what is known as the Quinby treatment. He originally shook his bees from diseased hives into a clean hive and caused them to build new combs. In that early day there was no such thing known as comb foundation; but the bees were obliged to build their own natural combs. This necessarily compelled them to use up any diseased honey that they might have in their sacs in the comb-building. If the Quinby treatment or the foundation plan of treatment is a success it would naturally follow that a swarm of bees leaving a diseased hive or diseased combs would not carry the disease with it, for it would be compelled to carry out automatically what is known as the Quinby treatment of cure; but if such a swarm of bees should go into a bee-tree that already had disease, or should occupy combs that had been infected by foul brood, of course the disease would appear again.—ED.]

## From 25 to 90 Colonies, and 2 Tons of Honey; Crops Sold at 25 Cts. per Pound

I had 55 colonies, spring count, and have increased 35, and have two tons of honey so far. This honey was gathered during parts of April and May this year. I thought I was amply prepared for the honey-flow, but used every thing in the way of hives and supers I had, and think I could have doubled my crop had I had supers sufficient. Nectar came from wild flowers mainly; but there was a two-acre patch of buckwheat half a mile away which makes the honey a light amber. I produce both bulk comb and extracted. I have just discovered that I am within only a few miles of thousands of acres of tupelo gum which is absolutely unoccupied by bees. I have a splendid market for all the honey I can produce, at 25 cts. per lb. for bulk comb and 20 cts. for extracted. So far I have visited only the office buildings and merchants at their places of business. Trade is all retail, 5 and 10 lb. lots; no house-to-house soliciting (at residences) so far. Nearly all deliveries are made on the spot at the time the order is taken. I don't have to deliver at a residence. My bees are all on a 25-ft. town lot on which is also a house and barn.

Nederland, Tex., June 19. J. H. WEEKS.

## Condition of Nuclei to which the Virgins were Introduced

I should like to know whether there were eggs and larvæ present in colonies where those "old virgins" were introduced (editorial, Sept. 1, p. 594). Will you please let me know the condition existing in nuclei or colony at the time of introducing? how long queenless? any supersedures yet? any cells at time of introducing?

Corinne, Utah, Sept. 5. A. B. DICKINSON.

[Mr. Marchant replies as follows:—ED.]

"I have tried introducing old virgins to colonies and nuclei in various circumstances, but I find that they will be more successfully accepted in colonies or nuclei that have been queenless not over 48 hours. If cells have been started and not removed, the results are not very satisfactory. If the cells are removed several hours before the virgins are run in, they are usually accepted all right. So far I have found no supersedure, and do not believe there will be any, for I am sure that, where the old virgins are run in, they will make as good queens as any, unless the virgins in question are very old indeed. Virgins five or six days old are all right. Some of my best queens were old virgins when introduced."

## Good Season for Colorado

This was a good honey season here; about 12 cars, total crop. My crop was 200 cases comb, 8000 lbs. bulk comb, and 25,000 extracted; mostly sold except the last car of comb honey.

Rocky Ford, Colo., Sept. 11. BERT W. HOPPER.

# Our Homes

A. I. Root

Pure religion and undefiled before our God and Father is this, to visit the fatherless and widows in their affliction, and to keep himself unspotted from the world.—JAMES 1:27.

I clip the following from the Cleveland *Plain Dealer:*

When one of the Atlantic liners docked at New York, June 16, it bore among other passengers in the steerage a woman and a little child, on their way to join the husband and father in America—the land where one always has enough to eat, and where there are no nobles and landlords to whom one must bow very low.

Father had saved enough for a passage for mother, the family was to be reunited and all would be well. The father was Constantine Michalski. The newcomers were Antonia, his wife, and three-year-old Maria, bound for Cleveland.

They arrived. Eight days later Constantine was killed in an accident. Mother and child were left penniless.

To-day, because the two have become public charges, they are to be placed on a New York train by immigration officials and will be deported.

I suppose our emigration laws are wise, and almost a necessity; but when carried out to the very letter in some cases they work hardship and trouble. This good woman and her three-year-old daughter in one brief hour had all her dreams of the New World shattered, and through no fault of their own so far as we know; and yet she is pushed away back across the ocean, perhaps to be dropped without friends or means. I was wondering why the W. C. T. U. or the Salvation Army or some other worthy society could not have found a place for this woman where she could support herself and child, especially when there is such an increasing demand for help of all kinds. It will cost quite a little sum to send her back to her old home. Now, could not this sum have been employed in placing her where she could do good and receive good? Can any of our readers tell me if there is any such institution located near where emigrants land?

The above paves the way in a vivid manner for something else that is just coming up before our American people. Read the following, which I clip from the Illinois *Issue:*

MISPLACED PERSONAL LIBERTY.

Why deprive paupers, lunatics, idiots, and criminals of the personal liberty of landing upon our shores, and grant saloon-keepers the personal liberty of manufacturing them at home?

What do you think about it, friends? While our nation is thus treating that poor woman and her child described in the above, is it really true that the saloon business, at least indirectly, is kept going and encouraged in its work of *manufacturing* paupers, lunatics, idiots, and criminals? Answer the question yourself. If you are in dry territory where no saloons exist, thank God; and after you have thanked him for your own environment, read the news coming from all the great cities or any small town where saloons are tolerated, and then wake up and do something. Mr. Rutledge, the great temperance orator, told us a few days ago that several important temperance measures had been lost, some of them here in Ohio, because only *one voter in seven* voted at all; and in our recent crusade for woman suffrage, only one man in three voted either for or against. They just stayed at home and attended to what they considered to be more important business.

But there is going to be an awakening, thank God, and an awakening is now going on all over this whole wide world, and God's kingdom is coming.

With the above as an introduction I wish to submit to you another important matter concerning which the world is (thank God) also waking up. In our issue for September 15 I spoke about dentistry and what it is doing for the health of our people. A good friend of mine has sent me a beautiful little magazine entitled *Oral Hygiene,* a journal for dentists; and after briefly turning over its pages I devoutly wished it could be read by every man, woman, and child. Here is the letter that called my attention to the magazine:

Cowan, Carr & Lauderdale,
Producers of
HONEY
Geneseo, New York

*My dear Sir:*—By this mail I am sending you a copy of *Oral Hygiene,* and desire to draw your attention to the editorial by Dr. Hunt, on page 226. It may be a little too plain-spoken for a lay publication such as GLEANINGS, but I think your perusal of the article will possibly be of assistance to you in some of your future writing; and at any rate I am glad to introduce to you another courageous man, "Dr. Hunt," who is not afraid to say what he knows is true.

Geneseo, N. Y., Sept. 13. J. W. COWAN.

Below is the article referred to, which I clip from said magazine:

Every child has the sacred and inalienable right to be born free from disease, free from deformity, and with pure blood. The State which does not do its full duty in the matter of securing these sacred and inalienable rights to all children is deficient and delinquent in its duties.

From 70 to 80 per cent of abdominal and pelvic surgical operations on women are the result of gonorrheal infection transmitted by infected and supposedly cured husbands.

Gonorrhea permanently maims one in a hundred and kills one in two hundred.

It is a shame to our civilization, a fearful sin of omission on the part of the State, that not less than five hundred noble and pure women are inoculated annually in Indiana with loathsome diseases, and the law is silent.

The venereal diseases are social assassins. They cause deterioration of the race.

Twenty-eight per cent of insanity is caused by syphilis. The government spends scores of thousands of dollars, and establishes rigid inspections to prevent the spread of the coitus disease (animal syphilis) of the horse, but the infection of the horrid syphilis that entails endless misery on scores of thousands of innocent women and children may be disseminated by anybody, and is being disseminated by scores of persons in this country, unchecked, under the protection of the "personal liberty" flag. Alas, that so little regard is had for the loss of liberty of infected women and children.

Marriage of a man with venereal disease is not only a violation of decency and love; it is a hideous and dastardly crime. And, let not the State be *particeps criminis* by failure to enact restrictive measures.

There exists a test for syphilis so simple that there can be no more objection on any sentimental ground to it than to vaccination.

A child born with syphilis will rarely come to useful manhood or womanhood. Such are almost certain to become dependents and delinquents, and so a burden to society.

To permit the procreation of the unfit is a violation of all the laws of economy. That State is sadly incompetent which permits lepers to marry and procreate, and then builds homes for the infected progeny.

Let a man poison a pure woman with arsenic, and the State takes him severely in hand without hesitation or care of expense. Let him poison her pure body with the leprosy of syphilis or gonorrhea, and the State is silent.

Prudery, the cause of the silence, is not a virtue. It is a mock-modesty. It is to virtue as nastiness is to purity. Yet it holds us back from steps necessary to secure the sacred and inalienable right of children to be born free from disease.

Our readers will recall that I have taken up this matter several times before; and I hardly need inform you that the saloon business is at the bottom of the whole work. Where saloons are banished, houses of ill fame soon disappear. They can not live without the curse of intoxicants. The people who make money out of this traffic are fighting woman suffrage tooth and nail. They well know that if women handle affairs, innocent mothers along this line will be a thing of the past; and if the mothers could have their say in the matter it is very certain that no more children would be cursed for life, because their fathers first got drunk and then followed after the "strange woman."

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WAS ALL CREATION MADE SOLELY FOR MAN'S BENEFIT.

*Mr. Root:*—Under the heading Special Notices, in a letter from a correspondent, I notice this paragraph:

"I believe that God placed every thing here to be of use to man in some way or other, but only we are so blind we don't catch on to all of them."

Now, I have no disposition to find fault with the writer of this paragraph; but I wish to call attention to what I consider a serious mistake often made by mankind in assuming that, because we are the dominant, and, because of our intellect, the most powerful visible creature inhabiting our earth, that the earth and all that is therein, and the sea and all that is therein, and the air and all that is therein, are made for man's peculiar benefit. I am sure that man can be benefited and learn something from all creatures, but that is not the purpose of their creation. I can conceive of no reason for man's being placed on this earth other than that he might have opportunity for growth and development, and the acquirement of knowledge, power, and self-control. To me, life on this earth is as a great school with wonderful opportunities; and I believe that all life on this globe, however far below us it may be in development, is placed here for the same purpose, that it may develop, unfold, and gain experience. Because we form the highest class in this great university, we should not conclude that all the lower grades are placed here for our benefit. We should rather strive to be of assistance to the lower classes by showing kindness and helpfulness in all possible ways. I fear the idea that all things are created for our benefit is the cause of much needless cruelty to helpless dumb animals.

May God help us to see and realize that all life is one, and that we are no better in his sight, and no more objects of his loving care than the most lowly objects of creation.

Louisville, Ky., Sept. 30. W. C. FURNAS.

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SHOTS THAT WEIGH 1000 LBS. EACH, ETC.; SEE PAGE 197, MARCH 15.

I am still on the U. S. S. Arkansas, and have the gyro compass. We just came in after target practice, where we broke the world's record with twelve-inch guns, firing six shots and making six hits in fifty-seven seconds. You can imagine how fast the boys worked handling projectiles weighing nearly one thousand pounds each, in such a short time. We are all proud of our record.

I was promoted to-day to "electrician, first class," which pays $55.00 a month—an increase of $11.00 a month.

We are going to Naples, Italy, Oct. 25. I expect to go to Rome and see the sights, which I hear are very interesting.

By the way, I received GLEANINGS this evening, when I happened to glance at the trouble with your teeth. That is one thing the navy requires most strongly; and, thanks to sister Donna, who used to scold me about mine, I finally got to noticing people's teeth. I also "noticed" yours when I was there, and often wondered if you realized what a difference it makes when a person gets up in the morning. That is one thing most people give little attention to, and yet it is one of the most important things.

HOMER ROOT.

U. S. S. Arkansas, Brooklyn, N. Y., Sept. 18.

Dear nephew, I am glad to hear of your promotion, and I am glad, too, to see you take your old uncle to task for carelessness in his personal habits; but just a word about those 1000-lb. projectiles. I am, as a rule, glad to note progress and efficiency everywhere; but I am praying that the day may soon come when "peace on earth and good will to men" will do away with the need of engines of war. I know there are many great and good men who claim these immense battle-ships are really *messengers* of peace; and it may be that Mexico is behaving a little better because of her knowledge of these things, especially when she considers the matter of permitting her subjects to lay hands on citizens of the United States.

# High-pressure Gardening

" HIGH-PRESSURE " CANTALOUP MELONS, ETC.

On former pages I have told you about pushing the dasheen with old well-rotted stable manure and irrigation. I think I mentioned, also, giving my cantaloup melons some of the old well-rotted manure. Let me go a little more into detail. Some time in April I got a five-cent package of cantaloup melon seed. I think they were Burpee's seed. I asked for the Rocky Ford strain of cantaloup; but the dealer here in Medina was sold out, and gave me something that came from Burpee's that he thought " just as good." I have told you what bad weather for general garden stuff we had in April and May. Only a few of my melon seeds came up, and what did come up were such miserable-looking spindling things that I had very little hope they would ever amount to any thing. I covered them up with newspapers, however, during frosty nights, and about the time I got that rich old manure for the dasheens I gave some also to my melons. Now, this is the way I did it: I dug the soil away from each melon-plant. I pulled it back in a circle clear around the hill, and went down deep enough to uncover the white tiny rootlets. Then I filled in this cavity with perhaps a quart or two of this old heavy rich stable manure, mixing it in with the dirt. I finally soaked the manure and soil with water; then with my hoe I pulled some soft fine soil all up around the plants, covering the wet part so the sun could not make the clay soil bake. Some fine weather coming on soon, the melon-plants just woke up and astonished me. I visited them every night and morning, to notice the change—kept the dirt stirred around them, all the weeds out, and in a little while they were sending out runners. Under the stimulus of this rich manure they made an astonishing growth, and pretty soon melons were set in great profusion. I think I watered them only once after putting the manure around the roots. During the last of August we began to get ripe melons; and not only in our own home but from all around Rootville came expressions of "happy surprise." The melons in the market which had been shipped in from away off somewhere could not be compared with them. And right in here comes another of my " wonderful discoveries " in regard to God's gifts. The melons were so luscious, and there were so many of them, I began to use them for my evening meal instead of apples. This is the way I did it: Let the melon get good and ripe, so you can eat it with a spoon. Cut it in halves, and scoop out the seeds; then have your five-o'clock supper of cantaloup melon and nothing else. If the melon is real ripe you can scoop it out with a spoon until nothing is left but a thin rind. According to my notion you would need a little bit of cheese to go with your melon to make a " balanced ration."

Now, when you get hold of some melons fresh from the garden, as good as ours, if you do not agree with me that it is the most delicious meal you ever ate I shall be surprised; and the best part of it all is, that it causes no disturbance whatever to the digestive apparatus; whereas if I should eat a regular square meal as people generally do for the last meal of the day, I should be distressed all night, and have nightmare, etc. Just one word more:

If you have only a little backyard garden, by following the above program you can have beautiful nice melons that, on a rough estimate, would not cost you over a cent apiece; and in quality as well as cost they are away ahead of any thing you can find in the market—at least that has been my experience. Still another word:

Some Hubbard squashes, about a dozen hills, near the cantaloups, that had the same treatment, have run all over the garden, and there are fifteen or twenty most beautiful squashes, some of them about the largest I ever saw; and a wheelbarrowload of that old rich black manure did it all. If you want to reduce the " high cost of living," have a garden, even if it is only a little bit of one, and manage it according to the directions above given.

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" PRACTICAL POTATO CULTURE;" ALSO SOMETHING ABOUT HEADING OFF THE BUGS.

I hold in my hand an excellent little book of 126 pages, by E. A. Rogers, of Brunswick, Maine. The book is chock full of excellent suggestions in regard to growing potatoes, not only in Maine but almost anywhere else. It also contains some beautiful pictures—a good lot of them—and it is well worth the price of any potato-grower or to anybody who is interested in the matter of better potatoes and more of them. Now, with all the good things in this book there is something else about it that troubles me a little. The following letter to our Experiment Station explains itself:

Ohio Experiment Station, Wooster, Ohio.
DIRECTOR THORN,

What troubles me just now is that in a book entitled " Practical Potato Culture," in speaking of the use of Paris green, arsenite of lead, and other arsenical poisons, the statement is made very vehe-

mently that the steady use of these poisons for a period of years gets so much poison in the soil that it damages vegetation, kills apple-trees, etc. They give two or three pages toward proving this statement. Now, T. B. Terry, you may be aware, says in his potato-book it's very much better to get along without poisons, and I agree with him. Perhaps if I were growing potatoes on a larger scale, however, I would use poison. Now, why I come to you in regard to this matter is that the book winds up its argument by recommending "Bug Death," and I am inclined to think the book is sent out by those concerned in the sale of "Bug Death." Could you briefly tell me what you think about the statement that "the continued use of Paris green or even arsenite of soda will injure the soil"? I feel satisfied Paris green usually injures the foliage of the potatoes more or less. That's one reason why I prefer to get along without it.

A. I. ROOT.

Below is a reply from Professor Gossard, the Station Entomologist:

*Mr. A. I. Root:*—Director Thorne has referred to me your letter of July 10, requesting that I answer regarding continuous use of arsenicals. The original investigations upon which these statements regarding the accumulative effects of arsenic are based were conducted by Prof. Headen, of the Colorado Agricultural College, on apple-trees growing in an alkali soil. It is probably true that the continued use of arsenicals on such a soil will finally work injury to the trees by putting arsenic into solution in water. The hair roots are said to be killed, and more or less of arsenic was found in the wood, bark, fruit, and leaves of these trees. Some other Western investigators, notably Director E. D. Ball, of the Utah Experiment Station, take issue with Prof. Headen regarding his general conclusion, and believe that caution is to be exercised only with trees standing in alkali land. However this may be, we know of orchards in Ohio that have been continuously sprayed with arsenicals and copper salts for 20 to 25 years, and the orchards are in the pink of condition, while surrounding orchards that were not sprayed at all are in far worse shape, most of them dead long ago. I have had occasion to sample soils in Ohio orchards where spraying had been done very liberally for a number of seasons, and we were never able to get more than a trace of arsenic in the soil or in the wood of these trees. The arsenic goes into solution slowly, and is carried away with the percolating waters. While I am in no position to say that enough arsenic might not accumulate in the course of a century to injure orchard trees, or other vegetation growing upon such soil, I think it rather improbable, and am sure that such sprays can be applied very liberally for more than a quarter of a century without perceptibly injuring apple-orchards planted on it, and in which grass, weeds, and the general mulch of the orchard appear to be in perfect health. I do not remember the exact composition of "Bug Death," but from a hazy remembrance believe that the poison principle in it is zinc oxide. It appears to me that an accumulation of insoluble zinc compounds in the soil would be as apt, and probably more apt, to cause injury to vegetation than arsenic would be.

Arsenic, in a small quantity, is a tonic to many kinds of plants, just as it is to the human being; and with the abundant rainfall we have in Ohio, and with the absence of alkali. I believe it very improbable that any damage whatever will be done to the soil in the course of half a century or more of continuous use. However, with such crops as potatoes and garden stuff, I would think it the part of wisdom to rotate crops, and not apply the spray oftener than once every two or three years. With this sort of usage it is improbable that Ohio soils would ever be injured by the small quantities of arsenic used on potatoes.

I question if any one is able to give a much more definite answer than this to your question; but you may be able to get fuller experimental data from the United States Department of Agriculture.

H. A. GOSSARD, Entomologist.

Wooster, Ohio, July 12.

I am very glad to know that the danger alluded to is little or nothing in the average locality; but I wish to add one suggestion in regard to poison of any kind. Terry says in our potato-book that many times killing the first Colorado beetle as soon as one can be found, and followed it up, will often obviate the need of the troublesome business of spraying. When a potato first begins to shoot up out of the ground, give the little boys and girls a nickel for every bug they find. Later, when the bugs get to be more plentiful, give the children a cent apiece for them; then 25 cts. a hundred, and finally 5 cts. a hundred. A wise father can regulate the price so that the children will not make money *too* fast. I have done this repeatedly with my own garden, and I not only have *better* potatoes, but gathering the bugs and picking off the eggs is *less work* than using poison. Where your neighbors are close by, and allow the bugs to eat up their potatoes, I know it makes a little more work. At the same time you go after the bugs you can look carefully, not only after eggs, but for any weed that has got a start in the potato-hill. During this last summer I have greatly enjoyed this method of proving that "prevention is better than cure."

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## THE DASHEEN—MORE ABOUT IT.

We clip the following from the Jacksonville *Times-Union:*

THE BROOKSVILLE PLANT-TESTING STATION; "FOREIGN-PLANT INTRODUCTORY STATION" OF THE GOVERNMENT.

"The Stroller," in the last issue of the *Florida Grower*, has the following mention of this interesting and important institution:

"Brooksville has the distinction of being one of two places selected by the United States Government as a plant-testing station, the other being at Miami. Here the Agricultural Department has 35 acres of land, and has established what is known as a "foreign-plant introductory station." Here have been introduced many kinds of forage plants, foreign bamboos, foreign oranges and grapefruit, and last, but by no means least, 182 varieties of the dasheen. Of this number over one-half have been found to be practically worthless, and but three edible. The roots of these three varieties are used as substitutes for potatoes, some claiming them to be superior, and certainly they are very fine eating, being widely used for that purpose in the countries from which they came. One other variety is being produced in quantity for a tryout as to its value as a flour. Last year this station raised 45,000 pounds of dasheens. Of these, 15,000 pounds were distributed to growers and 30,000 pounds sent to Battle Creek to be tried out for flour.

Prof. Gomm, who is in charge of the station, says that the demand last year for seed was tremendous.

He sent the seed in four-pound lots; and to get rid of 15,000 pounds he certainly must have done a rushing business; and he further says he supposed that there were at least 1000 requests that could not be complied with last season. This season's crop will be distributed in the same way, as the Government wishes to encourage the growth of this food, which seems destined to help in a measure to solve the problem of the high cost of living. There are about five acres in the three edible varieties, and this field is certainly a beautiful sight.

I saw here South African millet standing eighteen feet high. Egyptian wheat is growing well, and there are thirty-five varieties of sorghum under inspection. The bamboo being tried are the Japanese varieties used in that country for building houses. Prof. Gomm is authority for the statement that several hundred thousands of dollars' worth of this bamboo is annually imported into this country for various purposes, so that this would seem to be the beginning of an industry in itself. For a soiling crop they are trying out an imported bean, which Prof. Gomm mentioned as the "Jack" bean. It grows to be seven or eight inches long; and, while I was told it was not edible, it looks like a mighty fine food for cattle."

Let me add that, since our report of the dasheen flour, some of our women folks are learning better how to use it; and this morning I ate a dasheen gem that was certainly equal to any thing I ever tasted in the bread line. So far as I know, dasheen flour can be shipped and kept like ordinary wheat flour. Inquiries are coming to me constantly, asking where they can get the dasheens. The above clipping tells us the Government is going to have additional lots in 4-lb. packages, and it may be well for the friends to get their applications in early. Don't write me, but apply to the Department of Agriculture, Washington.

By the way, what do you think of millet standing 18 feet high? Can anybody tell us more about it, or is it a misprint?

DASHEENS—STILL MORE IN REGARD TO THEM.

For fear my Florida quarter-acre might not be able to furnish a tuber or two to every reader of GLEANINGS, I directed a letter to the Brooksville Board of Trade, asking them if they would be able to help me out if I did not grow tubers enough to go around to our 30,000 subscribers. Of course, I do not suppose that *every* one of the 30,000 will apply for a tuber; but I want to be sure not to disappoint any one. Below is their reply:

*Mr. A. I. Root:*—Your letter of Sept. 20 is at hand, and is greatly appreciated. We are glad to be assured that you are taking such an active interest in the dasheen, and we hope that the seed stock you obtained from us last spring will bear abundant returns.

We have five acres out this year, and there are, perhaps, that many acres more in the hands of the farmers hereabout, so you see the crop this year will be limited. The Government has six or seven acres out at the Foreign Plant Introduction Station here, but we presume they will use them for distribution in 4-lb. packages as they did last year. You can rest assured, however, that we will supply you with a portion of our crop, which will not be on the market much before the latter part of November.

If you wish to be on the safe side, be careful of what you do in the matter of distributing dasheens secured from South Africa, South America, New Zealand, etc. Your Uncle Sam at the local station is proceeding with the greatest caution in this matter, as you will readily understand when we tell you that, ont of about 200 varieties obtained from foreign countries, they have as yet recommended but four as being superior for human consumption. Many varieties are yet too acrid to constitute eatable stuff; and if they ever amount to any thing your Uncle Samuel will surely discover it here through extensive experiment. Therefore, test out every variety, or send samples to the Department to be tested, before you offer them to your patrons, or they may charge you with handing them something worse than a lemon—an Indian turnip. The dasheens that have been approved by the Government experts here are O. K., and we have reason to believe in a great future for them, as indicated by the reports of those who tried them in various parts of the country last fall and winter. They have been used by some of the most noted dieticians in the country, and have been pronounced especially good for persons suffering from any form of stomach trouble.

Then think of their versatility! You can treat the young stalks as celery, and secure a product superior to asparagus tips or mushrooms. A single planting will grow eight crops, coming off about every two weeks. You can also use the stalks for rhubarb and the leaves of certain varieties for greens. When the tuber matures you can use it in any form the potato can be used, or grind into flour and make of it any thing that can be made of wheat or other flour. You can make a pie-crust of the flour, and the filling of the stalk, as in rhubarb, or the tuber, as with the sweet potato or pumpkin.

My friend, if you would be initiated into the mysteries of propagating and harvesting dasheens, make it a point to visit Brooksville on your way South next month, and we will show you "sumpin."

C. H. FREAS, Sec. Brooksville Board of Trade.
Brooksville, Fla., Sept. 23.

*Later.*—On receipt of above I asked if they could fill orders to our readers by parcel post, and below is their reply:

*Mr. A. I. Root:*—In reply to your letter of Sept. 26, I will say that we will be pleased to ship by parcel post any orders you may desire for your patrons, and sell you in quantity for other means of distribution.

If you can manage to get here in November, you will likely see the dasheen growing in all its pristine glory, for the stalks remain green until the frosts come. Try to be here.

The publication and clippings arrived all right, and we were glad to note the mention you make of the stuff that made Brooksville famous. The writer has written enough about that tuber to fill two volumes, and I could write as much more if it were necessary. We will be glad to have you visit Brooksville at your earliest convenience.

Brooksville, Fla., Sept. 29. C. H. FREAS,

Please notice what they say of it in regard to acridity. Mrs. Root has just been urging that I should give also the objectionable features of the dasheen as well as the good. Well, cooking entirely destroys this acridity. Here is what the Government bulletin has to say in regard to this matter:

The leaves of the dasheen contain the same acrid principle that characterizes the Indian turnip and most other plants of this family. They should never be tasted raw. The tubers of the most promising

Trinidad varieties are free from this acridity, even in the raw state; but because of the possibility of tubers of an acrid variety being mixed with these it is best never to taste them uncooked. In cases of the accidental tasting of acrid tubers or leaves, lemon juice in a little water is found to alleviate the ill effects.

If dasheens are handled in water in scraping or paring them for cooking, a level teaspoonful of sal soda should be added to each quart of water. The outer part of the tubers contains an irritant that causes the hands to sting in somewhat the same way as the mouth and throat from the eating of raw, acrid leaves or tubers. The hands are affected in this way even in the case of tubers that are not acrid to the taste. If water is not used while scraping them, it is best to wash the hands afterward in soda water of the strength mentioned.

The fat of milk or meat seems to assist in destroying the acridity.

Hunters are well aware of a similar property belonging to the Indian turnip, alluded to in the above letter. Please notice their endorsement of what I have told you, that the dasheen, every particle of it, at every stage of its growth, is valuable for human food; and not only that, it is a delicious article of diet.

One word more about the tubers to be given our subscribers. They are to be sent only to those who apply, and who have their subscription paid up for one year or more from the time of applying. Send in your applications when you choose. We expect to mail them from our Florida home somewhere about the first of January. As they are injured by freezing, perhaps the friends in the extreme North had better not order them sent until it is time to plant, say March or April.

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THE AMADUMBE DASHEEN OF SOUTH AFRICA; SEE PAGE 698.

*Mr. Root:*—Your recent letter was received on the 13th, and the package the 14th. On the 15th I planted them. I took the responsibility of planting on Mr. Ault's land, as his dasheen show so much better than mine or yours. It is very evident that the dasheen needs much moisture as well as an abundance of fertilizer, both organic and chemical. for best results. We had some for dinner yesterday (small ones) that I fingered out from your first planting in January. I am afraid you are going to be disappointed in the yield. Your land is entirely too dry. Ault's land had water standing in the ditches each side of the rows all summer.

As to the edible qualities, we think we would rather have a good Irish potato. ,

MR. AND MRS. C. L. HARRISON.

Bradentown, Fla., Sept. 16.

The above corroborates what we have said before, that the dasheen, in order to grow to perfection, should have wet ground, or ground where the roots can get down into running or standing water; and the fact that ours down in Fliorida did not have this wet ground is, may be, why friend Harrison thinks he prefers a good Irish potato. We have now cooked quite a few here in Medina; but so far they are hardly mature enough to make a nice baked dasheen; but the outside tubers cut up and made into a stew like mushrooms is certainly a splendid substitute for a mushroom. And please consider that mushrooms sell for from 40 cts. to $1.00 per lb., while the dasheen may be grown for 40 cts. a peck without any trouble. When Mrs. Root suggested that I might be giving it too much praise, Huber replied, after I carried over to him a little dish for breakfast, "Father, you *can't* give it too much praise." The other children, however, were not quite so extravagant. Now excuse me for the following summing-up as I see it: The dasheen can be grown *anywhere,* and every bit of the plant is *edible*—the tubers under ground, the tender shoots above ground, for a stew, and the great green leaves (if they are not too old) for greens. It may not fully mature here in the North. That is not quite settled; but it will certainly grow these luscious small tubers with their tender shoots as a substitute for asparagus.

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THE HYBRID TOMATO SEED, ETC.

*Mr. Root:*—I should like to make a few additions to your article on tomato hybrids in the Sept. 1st GLEANINGS. First, the New York Experiment Station is at Geneva, not Oneida.

In cross-fertilizing the tomato, not only does the pollen have to be carried from one blossom to the other as you have described, but the anthers of the blossom have to be removed before they commence to shed their pollen, as the tomato blossom is a self-fertilizing flower, and cross-fertilizing does not take place readily.

Now as to the varieties. I used the Earliana in quite a number of crosses, and it was quite good; but it made a too soft tomato. But the best results I obtained were by a dwarf tomato. This seems to give a stronger and more vigorous plant, as was found by the New York Experiment Station. The dwarf that I used was one that I originated, and not only makes a vigorous tomato, but one that has a solidity found only in the late kinds. In canning I find my hybrids of this cross were far superior to the Earliana crosses. It is only in canning or shipping that this quality becomes noticeable. Down in Marietta, O., where over 500 acres are grown on stakes, early, and shipped to such places as Cleveland and Chicago, they never use Earliana, but mostly Beauty.

This matter of first-generation plants is an interesting one. Corn is another crop that seems greatly benefited by crossing. Prof. East, in an article in the *Country Gentleman,* last October, made the statement that from 20 to 150 per cent of gain had been made in many cases. It seems strange that some enterprising seedsman does not produce such seed for sale; but Henry Field, of Iowa, is the only one whom I know of who has offered it yet.

It may seem a high price to pay $5.00 per ounce for tomato seed; but when we know that an ounce of seed will make enough plants for two to four acres, the increase of yield will pay many times over for the cost of the seed.

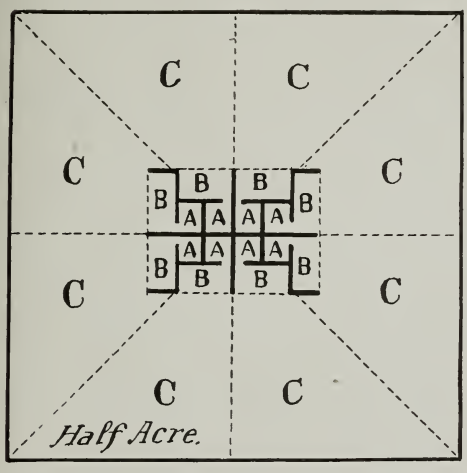
I wish somebody would offer crossbred corn for sale. I am going to do what I can in tomatoes, and it looks as if the readers of GLEANINGS would use up my supply of seed, as they seem to be an unusually up-to-date lot of people.

Medina, O., Sept. 18. E. C. GREEN.

# Poultry Department

CONVERGENT POULTRY-RUNS ACROSS THE WATER.

*Dear Sir:*—Since the time you published my article about the convergent poultry-runs, Nov. 15, 1912, I have not seen any thing further on the matter; so I thought you would like to hear the opinion held over on this side.




The chief drawback seems to be in the great length of the run when compared with the width, as the fowls are not inclined to keep the grass down at any distance from the house; and to overcome this Mr. Wright gives a plan of a plant of eight houses, sheds, and runs, which I enclose.

Our runs are occupied all the year round, so we have to allow more grass than you do.

Area of plant, ½ acre, consisting of eight houses, sheds, and runs. A, roosting-house 6 ft. square. B, scratching-sheds 12 ft. square. C, grass runs.

From Lewis Wright's Illustrated Poultry Book.

Personally I prefer the colony system, which Mr. Wright credits to Mr. Stoddard.

LIME GOOD FOR CLOVER.

I am afraid you missed the point in the leaflet taken from the Mark Lane *Express* about lime. Although it was printed in 1910 it was an article on farming in the 16th century in England, and went to show that the old timers knew that lime was good for clovers. Lime and salt are the two oldest artificial manures in existence, and are largely used in this country as well as seaweed.

FINDS BLACK BEES SUPERIOR TO ITALIANS.

I was pleased to see in the Jan. 15th issue J. E. Crane's remarks about the good old blacks. All the other "Gleaners" seem to think them of little value; but I can assure you that I have had Italians direct from Italy, and that they can't gather honey as do the blacks, and they are not half as good at wintering. W. A. TEARE.

Ballashellan, Ballabeg, Isle of Man, Jan. 2.

Many thanks, friend T., for the pains you have taken to keep me posted. The diagram you give is certainly very ingenious, and might answer an excellent purpose for a half-acre poultry-farm. There would certainly be economy in constructing such houses, especially for a cold climate. I would, however, greatly prefer having an open court, and houses around the outside. This isolates the eight different roosting-places. The arrangement you give, you will notice, will be a rather bad place if vermin or some contagious disease should get among the poultry. I have used the plan I have described, one winter. The inner court I have spoken of is 45 feet across, with the granary in the center. No chickens are allowed in this inner court or inclosure, and it can be kept as neat and tidy as you please; and at the same time the eggs may be gathered, fowls supplied with all they need right in this one spot, and yet the chickens can go away off in every direction just as they do on the ordinary farm. Ours frequently go away clear out of sight, both young and old. On account of the trouble with the hawks, however, we keep the small chicks in a covered inclosure until they are able to take care of themselves.

In regard to black bees being superior to the Italians, this sometimes happens in certain localities or with an extra good strain of black bees. I believe, however, our great honey-producers the world over prefer the Italians as a rule; but it has been intimated that a cross between the two races, even if they are ugly, will get a larger crop of honey, many times, than either the pure blacks or pure Italians.

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DUCKS AND CHICKENS SWALLOWING CROOKED RUSTY NAILS, ETC.

The letter below accompanies a photograph of the contents of a duck's crop.

EXTRAORDINARY DEPRAVITY OF APPETITE. . .

This collection of "ironmongery" was removed from a duck owned by Mrs. Bloomfield, of Taringa, Brisbane. The bird died after a few days' illness, and an autopsy revealed the cause of death—sixty-two nails, bent and straight, varying from one inch to two inches; three iron boot-tips, one one-inch screw, and four wood tin-tacks, all of which had been swallowed by the duck, and were in an advanced state of rustiness.

Under the photo we read the following:

I see you take a keen interest in poultry and ducks; but I think the photo of the diet that the duck in Brisbane, Queensland, took, can "go one better" than all your Amercan ducks, allowing that all exciting things generally come from America.

WALTER LINCOLN.

Toowoomba, Queensland, Australia, June 2.

The picture reveals that the nails were mostly crooked ones. This particular duck, no doubt, was foolish enough to think that they were worms. I remember, also, that Kellerstrass in the first editon of his book advised against allowing rusty nails, especially crooked ones, to lie around where the chickens might get hold of them. Since that time I have kept watch to see if any of our chickens could be fooled by crooked nails or pieces of rusty wire. I have never found one that was foolish enough to swal-

low such an object, and therefore I can not think that it is a very common thing for a chicken to hurt itself by swallowing such objects, although it might happen at times.

HOT TALLOW FOR THE RED MITES, ETC.

*Dear Mr. Root:*—I have followed your poultry articles with interest, being particularly interested in the article about "convergent" yards. Some time ago one of your correspondents wrote that he prevented mites by coating his roost-poles with hot tallow once a year only. I had lately bought a farm that had a chicken-house very much infested with red mites. I had been painting my roosts once a week with crude petroleum scented with sassafras and cedar oils. I substituted the hot tallow, but one week later found the mites in quite increased numbers. I resumed the petroleum, and now have them almost exterminated. An application of tallow followed by petroleum once a week is a very good thing indeed, as it makes the poles more slippery than the petroleum alone; but I don't think the tallow alone will do the business.

CHARLES A. JOHNSON.

Battle Creek, Mich., July 25.

WHY HENS PULL AND EAT EACH OTHER'S FEATHERS.

As I am making the Rhode Island Reds a specialty I write you in regard to feather pulling and eating. I am a subscriber to GLEANINGS, and enjoy it very much, and suspect you know something about hens as well as bees.

Cuba, N. Y., Aug. 25. MRS. C. E. PETTIT.

My good friend, there are two or more reasons why hens should pull feathers from their mates, and eat them. One is that they are lacking animal food. Give them beef scrap or ground meat. The other is they are probably shut up in too narrow quarters, and lack green stuff. Give them all the lettuce and cabbage, etc., they want, and also give them a mash containing salt, but not too much. Salt about as much as we do our food, then let them run outdoors in a large yard where they can get bugs as well as green stuff, and I think they will get over it.

A 25-YEAR-OLD HEN; A SUGGESTION IN REGARD TO A "NATURE" BROODER.

I give place to the following, clipped from the *Farm and Fireside,* because it tells us how old a hen may live to be, and suggests also a brooder for chickens on nature's plan.

A hen owned by the writer, and having quite a remarkable history, has recently joined the majority of her kind. I bought this hen in 1890 for half a dollar. She was just a plebian yellow hen, without family or reputed pedigree. "Is she young?" I asked of the seller. "She's not old; she's not laying," was the reply.

I scanned her feet, as a buyer does a horse's mouth, to guess her age. I concluded she had seen a couple of summers or more. I therefore believe her to be at the time of her death, in April, 1913, about twenty-five years of age. She made good her reputation as a "fair layer."

She began to fail in strength when about ten years old. But she kept on laying and rearing her broods. That is, she laid irregularly, and in 1912 one egg only. Her eggs had ceased to be fertile for several years, or after she began to look old.

"Why was her life prolonged?" She would mother any brood from quail to turkeys, at any age offered, even after she was too crippled to scratch for them. In her later years a brood of young fowls was always given her in the autumn to insure her own safe passage through the winter. These chickens thought the mother hen hovered them, and were satisfied with the warmth always obtained by cuddling; but it was the vitality of the young which kept the old alive.

Of course, this does not prove that *any* old hen would receive any kind of chicks of any age, but it looks that way. Once in a while we find a hen that is that kind of mother; and we are told that capons will care for chicks all right. A hen that will take any brood of chickens from an incubator, or which are left motherless for any other reason, is very handy to have in the poultry-yard; and one such hen put in a barrel will take good care of as many as 70 day-old chicks, as I have told you. The ones outside will change places with those inside, and keep quite comfortable, even during frosty nights.

PERMANGANATE OF POTASH FOR POULTRY.

If I am correct our leading authorities agree that a little permanganate in the drinking-water—just enough to color it a little—is a benefit in warding off contagious diseases.

The following from one of our poultry journals (I regret that I can not say which one) suggests something else, and it also tells how to get it at a low cost.

I find in using permanganate of potassium in the drinking-water that it eats or keeps away the slimy substance that otherwise adheres to drinking-vessels, especially in warm weather. If you wish to get it cheap, go to the man who takes care of the fumigating in your borough, county, or township, and buy a pound from him (if he will sell it). Here I can get a pound for 22 cents, whereas to buy at a drug-store it costs 50 cents. It is burnt in the fumigating of houses for contagious disease; and if the Board of Health handles it, it comes cheap.

A "BOILED DOWN" POSTAL CARD.

You may recall that I have something to say about this in our issue for Oct. 1; and our good friend Madeleine E. Pruitt seems to have fallen in with my suggestion.

To Our Homes for July 15 I will say, "Amen." New baby here—girl. MADELEINE E. PRUITT.

Abilene, Tex., Aug. 18.

It might be a little impertinent to ask the question; but there are quite a few of us who would like to know just who is the mother of that girl baby. May God bless her and the mother too.

# Temperance

## SHALL WE CONTINUE TO GET OUR "REVENUE" FROM THE BREWERS, SALOON-KEEPERS, AND DISTILLERS?

*Mr. Root:*—I always read your Home Department with interest. In the paper of Sept. 15 you publish a letter of G. M. Doolittle, in which he seems to give credit to the saloonkeepers for paying half the revenue, and says: "We are, willingly or ignorantly, receiving pay to the half of our proportion of the government expenses through the efforts of the saloonkeepers." Surely Mr. Doolittle is not seriously attempting to condone the sale of intoxicating liquor. As an intelligent man he must know that three-fourths or more of all the crime and poverty, and the resulting misery and degradation, are caused by drink.

As for myself, I am neither willingly nor ignorantly receiving my share of the taxes paid by the saloon-keeper. I accept it under bitter protest, being forced to do so by laws made by men who are blind to the awful results of the legalized liquor-traffic in our land, or are bought over by the liquor interests.

How can any part of the expense of the general government be said to be paid by the saloon-keeper when every dollar of liquor revenue costs the people more than ten? And this is only the monetary view of the matter. No amount of revenue paid to a government can make amends for the misery, poverty, and ruin brought upon its people through the legalized sale of injurious drugs or intoxicating poisons.

Your reply to Mr. Doolittle is all right so far as it goes; but does it cover the ground? If we could persuade all the young people to "seek the kingdom of God and his righteousness" there would still remain the blighting effects of the traffic in intoxicants with its consequent misery and poverty, forced upon the wives and children of the incorrigible fathers and husbands, made drunkards by our government's willingness to (in the language of the poet of the Sierras) "sell hell to whom will pay for it." God not only commanded the Israelites to bring up their children in his fear, but those who led the people astray were dealt with in a way to strike terror to evil-doers. Not only did his prophets teach the evils of idolatry, but those advocating idolatry, the false priests, were slain without mercy.

Let us not only teach the children of our generation the dangers of intoxicating liquor, but do all we can, also, to destroy from the earth this Juggernaut that is crushing the life, spiritual and physical, out of hundreds of thousands of our people.

If every one who claims to be seeking the kingdom of God and righteousness would vote for the destruction of the distillery and the brewery, the greatest hindrance to the coming of that kingdom, and Satan's most efficient instrument for the ruin of the human race, would be removed.

Asheville, N. C., Sept. 21. O. BROMFIELD.

Dear brother, Mr. Doolittle, myself, and all good people, are in hearty accord with what you say. May God hasten the day when his kingdom shall be first in our nation—not the brewers and distillers and liquor-dealers.

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## KANSAS—SOMETHING FURTHER "THE MATTER" WITH HER.

A few years ago there was some sense when the brewers said that prohibition was a failure; but it is a piece of stupid folly to keep up that old story just now. What brought it about? A few days ago I heard a remark from a man of considerable ability, that it was a question whether Carrie A. Nation did not do more harm than good. I have seen Carrie Nation and talked with her. Bless her memory! When the brewers and saloon-keepers were trampling law under foot in Kansas, our good friend Carrie took a hatchet and smashed things up. Then she said to the Governor of Kansas, to the mayors, and different officials, all the way down, "Put me in jail for breaking the laws if you choose. I have done some harm in the way of loss of property, etc. But before you enforce the law in my case, please consider the saloon-keepers who curse both body and soul by trampling law under foot." The grave judges and magistrates were in a corner. It behooved them to be consistent, at least where a woman was concerned: and the final outcome was that Kansas became a model State in the way of law enforcement. See page 699, Oct. 1.

Now, here is something further about that same Kansas that I clip from the *Union Signal:*

KANSAS YOUTH UPHOLD PROHIBITION LAW.

Again and again it has been said prohibition is a failure in Kansas; that when the older generation responsible for its adoption passed over the reins of government to its sons and daughters—for Kansas has recognized women's rights as full citizens—Kansas would "come back to her senses."

That this prophecy was without foundation is best evidenced by the following statement from Attorney General Dawson:

"The last two sessions of the legislature answered these false prophets by passing the most drastic prohibition law in the world, killing the drugstore saloon, making it impossible even to cure snake-bites by the liquor treatment, and absolutely clapping down the 'lid' and riveting it on.

"They were not satisfied by going this far, but showed their appreciation of the benefits of State-wide prohibition by making it a felony for the fellow who violated the law a second time. And I have just lately received from the warden at the penitentiary a receipt for one 'Red Mercer,' who was sent up from Barber County as a first consignment to serve nine years for violating the new prohibition law.

"The law that sent him there was made by these tow-headed, one-gallused boys who grew to manhood on the Kansas prairies without ever having seen a saloon."

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## WHISKY FOR PATIENTS IN A TUBERCULOSIS SANITARIUM.

It seems from the Cleveland *Plain Dealer* that the superintendent of the sanitarium has been criticised for refusing whisky to their patients. See this:

"Superintendent Wright has no conception of medical ethics, and endeavored to discipline physicians and nurses as though they were children. I believe a mistake was made in choosing Wright."

Dr. Fox was asked if he knew that patients in the tuberculosis sanitarium, many of them dangerously ill, had been deprived of whisky at critical times.

"Yes," he replied. "There is this about the whisky situation: Mr. Wright called in the medical staff,

and asked that the amount of whisky furnished patients be cut down. It may have been that whisky had been used a little too freely, but depriving the patients of the stimulant at needed times was far from wise."

I take it from the above that the trouble with the superintendent was that he is a little more up to the times in regard to the use of whisky as a medicine. Now, I should like to submit this whole matter to the intelligent, up-to-date physicians of our land. If I am up to date myself, the decision is that alcoholic stimulants are the very worst things in the world for a tuberculosis patient. If the patient must die any way, and you wish to hurry up his death, give him whisky. The fashion of giving a patient whisky to make him feel better as he approaches death, I know used to be very common; and many a poor soul has been hurried to a drunkard's grave simply through the mistaken kindness of nurses and physicians who ought to have known better. I for one prefer to die without the whisky, even if it does take a little longer. Mrs. Root's father, when near death, protested because the doctors said he *must* have whisky. He said, when almost too feeble to speak at all, "I do not want it, and I do not need it. You are making me a drunken man." And, thank God, we were able to overrule the doctors, and let the good old man die sober, years ago.

*Later.*—Oct. 6 we find in the Cleveland *Plain Dealer* more about the probe instituted because of the complaint of the inmates of the hospitals. Here is a report of what one matron said before the committee:

"Give them all the *whisky* they want, and it would be all right," Miss Kelly further told the committee.

Further on we read:

He said that in Dr. McAfee's time patients had whisky three times a day.

"Now we get it only once a day in the morning—and a mighty small glass at that," he added.

Just think of it, you friends of temperance and Christian people. In this sanitarium for tuberculosis patients, a comparatively able man confesses that he used to have "whisky three times a day." But under the present superintendent he gets it only once a day, and not a full glass of whisky even then. Is not this probe or investigation letting some pretty big cats "out of the bag"?

## "MIGHT AS WELL TRY TO STOP THE WAVES OF THE OCEAN."

We clip the following from the *Union Signal*. See if you do not think it is about right.

In a frantic attempt to stem the tide of public sentiment which threatens to sweep them from the nation, the liquor interests are outlining plans for reform. "If the liquor-dealers do not want to see this State dry in two years," the president of the Ohio Liquor League is reported to have said, "they must not only live up to every State and municipal legal requirement, but they must help to bring about certain reforms not on the statute-books." The warning is most timely, but we apprehend that none of the contemplated reforms will avert the threatened calamity. It is becoming more apparent every day that you might as well try to stop the waves of the ocean as to stop the tide of prohibition.

The liquor men have always had to admit that, when the Christian men and women of the nation whole-heartedly and aggressively determine to "make the map all white," it will be done.

## IS EVIL IN THE ASCENDENCY?

*Dear Bro. Root:*—I have just read the letter in GLEANINGS by Bro. Doolittle. You will notice that the increase of revenue from liquors and tobacco in one year is about .05 2-3 per cent, while the increase of population in one year can not much exceed .02 per cent. In spite of all that is being done to check intemperance, it increases nearly three times as fast as the population. And the increase in crime marches hand in hand with the increase in intemperance. Facts are stubborn things. It is foolish to ignore them. Speaking in a broad way, the forces of our enemies are the victors; and unless there is a change we shall soon be like Sodom—ready for the fire to destroy. The present mighty effort of God's people to clean up this earth fails to do it. What we can not do, God will do. Jesus is coming. The last message to this truth (Rev. 10:11) is now world-wide, and my spirit says "Amen."

Riverside, Cal., Sept. 20. W. E. LITTLE.

My good brother, what you say is, I suppose, to a great extent true; but, if I am correct, the figures you give come either from the brewers and liquor people, or from some government official who is not in sympathy with prohibition. If you will read the *American Issue*, published at Westerville, Ohio, you will, I think, get the *full* facts in the case. It is true that a large quantity of liquors has been recently manufactured; and the statistics tell what has been made, and the brewers would make us believe that it has *all* been consumed as a beverage, which is not true.

## "SOCIETY MUST PAY THE PRICE."

Presuming our readers have all read about the trial of Diggs and Caminetti, I omit details, and simply give the summing-up of Judge Van Fleet after sentencing them not only to pay fines but to go to the penitentiary.

I wish to say that all through this case there is the evidence that drink had its paralyzing influence upon the morals and the minds of these men and the young girls with whom they went on that trip to Reno. The terrible, debasing influence of the saloon and the roadhouse is too disgustingly apparent, and I make the observation here that society must pay the price for permitting the existence of these highly objectionable places.

May God be praised for a judge who does not hesitate to come out so plainly and square-footed against the saloon; and may he grant that no petition to have them pardoned out just because they have money may be forthcoming.